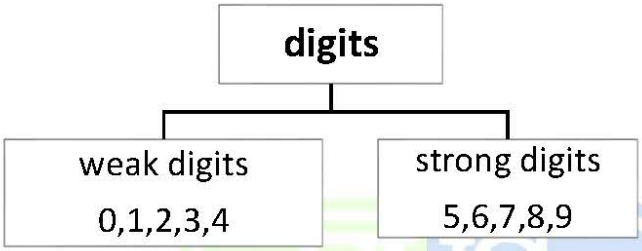
Approximating to the nearest hundredth and thousandth and thousandth:



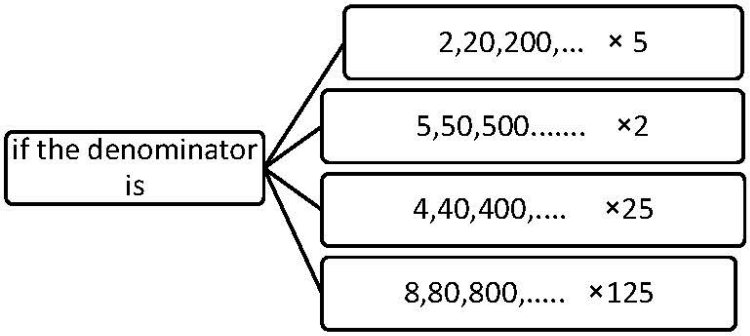
To approximate to the nearest (hundredth ,0.01 , $\frac{1}{100}$, two decimal places) do as follows:

1) Under line the hundredth digit .
2) Look at the digit written just to the right (at the thousandth's place) if this digit is
   - weak cancel all the digits to the right.
   - strong add one to the hundredth digit then cancel all the digits to the right.

To approximate to the nearest (thousandths ,0.001 , $\frac{1}{1000}$, three decimal places) do as follows:

1) Under line thousandths digit .
2) Look at the digit written just to the right (at the thousandths's place) if this digit is
   - weak cancel all the digits to the right.
   - strong add one to the thousandths digit then cancel all the digits to the right.

   Some times we need to convert to decimal form before approximating



Example:

Write in decimal form :

$$\frac{7 \times 5}{200 \times 5} = \frac{35}{1000} = 0.035$$

Some common fractions in decimal form

$\frac{1}{2} = 0.5$ $\frac{1}{5} = 0.2$,

$\frac{1}{4} = 0.2$ $\frac{3}{4} = 0.75$

$\frac{1}{8} = 0.125$

Comparing and ordering fractions:

First case : comparing two fractions having the same denominator.

Compare their numerators , the fraction with the greater numerator is greater than the other fraction .

Second case : comparing two fractions having the same numerator.

Compare their denominators , the fraction with the greater denominator is smaller than the other fraction (the greater denominator makes smaller fractions) .

Third case : : comparing two fractions having different numerators and different denominators .

First method : find the common denominator by using L.C.M of the two denominators then compare between two fraction having the same denominator

Second method (rocket method) :

Example :

$\frac{3}{4} \square \frac{11}{12}$, L.C.M of 4,12 = 12 , $\frac{3}{4} = \frac{9}{12}$

$\frac{9}{12} \boxed{<} \frac{11}{12}$ or $\frac{3}{4} \times \frac{11}{12}$ (36, 44)

Fourth : comparing fractions and decimals:

Convert the decimals into fraction with denominator 10,100,…… , then compare between two fractions.

Multiplying decimals by 10,100and 1000

Dividing decimals by 10,100 and 1000

Multiplying decimals by 10,100 and 1000: →	Dividing decimals by 10,100 and 1000: ←
Move the decimal point, to the right, number of places equal to number of zeroes . Ex: 3.3401× 100=334.01	Move the decimal point , to the left, number of places equal to number of zeroes Ex: 3.98÷ 100=0.0398

Multiplying fractions:

First : multiplying two fractions

1) Multiply the numerators of the two fractions .
2) Multiply the denominators of the two fractions.
3) Put the resulting fraction in the simplest form.

Example: $\frac{2}{3} \times \frac{6}{7} = \frac{12}{21} = \frac{4}{7}$

Or simplify then multiply

Ex: $\frac{2}{\cancel{13}} \times \frac{\cancel{6}\,2}{7} = \frac{4}{7}$

Second: multiplying a mixed number by a fraction or mixed number :

1) Change the mixed number into an improper fraction.
2) Multiply the fractions .

Ex $3\frac{1}{5} \times \frac{3}{4} = \frac{\cancel{16}\,4}{5} \times \frac{3}{\cancel{4}\,1} = \frac{12}{5} = 2\frac{2}{5}$

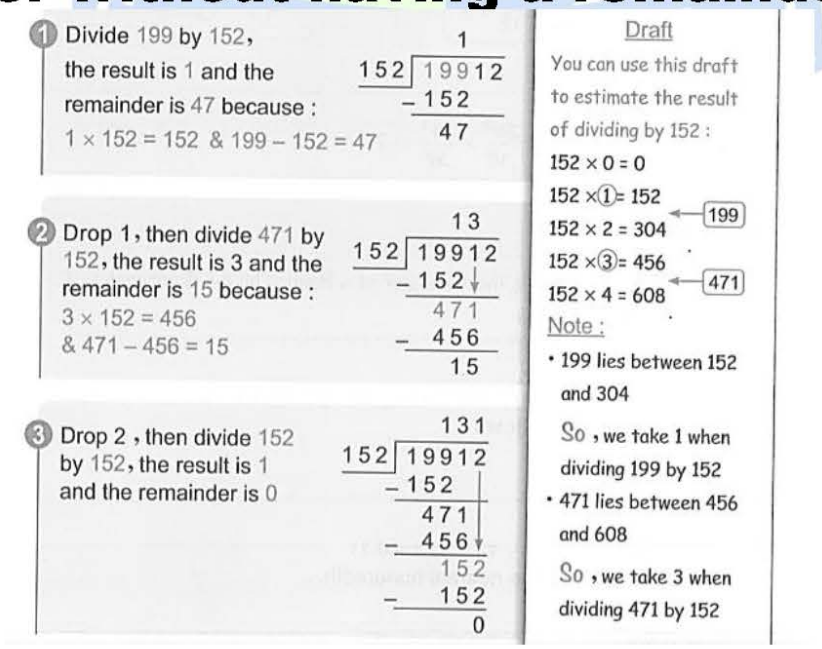
Dividing fractions:

1) Change divide to multiply.
2) Exchange the numerator and the denominator of the second fraction .
3) Multiply two fractions

EX:

$\frac{5}{7} \div \frac{4}{5} = \frac{5}{7} \times \frac{5}{4} = \frac{5\times5}{7\times4} = \frac{25}{28}$

Dividing a whole number by a 3-digit number without having a remainder :



1 Divide 199 by 152, the result is 1 and the remainder is 47 because : 1 × 152 = 152 & 199 – 152 = 47

```
      1
152 | 199 12
    - 152
      47
```

2 Drop 1, then divide 471 by 152, the result is 3 and the remainder is 15 because : 3 × 152 = 456 & 471 – 456 = 15

```
      13
152 | 199 12
    - 152↓
      471
    - 456
       15
```

3 Drop 2 , then divide 152 by 152, the result is 1 and the remainder is 0

```
      131
152 | 199 12
    - 152
      471
    - 456↓
      152
    - 152
        0
```

Draft

You can use this draft to estimate the result of dividing by 152 :

152 × 0 = 0
152 × ① = 152
152 × 2 = 304 ← 199
152 × ③ = 456
152 × 4 = 608 ← 471

Note :

- 199 lies between 152 and 304

So , we take 1 when dividing 199 by 152

- 471 lies between 456 and 608

So , we take 3 when dividing 471 by 152

1) Write the divisor as a whole number by multiply the divisor and dividend by 10,10,1000,..... according to the number of places of the decimal part of the divisor.
2) Use the same way of dividing whole numbers.

Example :

Find the quotient

$2.72 \div 0.8$ ($\times 10$)

$27.2 \div 8 = 3.4$

Infinite division

In infinite division we never reach a final digit , we stop at one digit greater than the place we want to approximate it

Example :

Find $13 \div 123$ to the nearest hundredth

$$
\begin{array}{r|l}
 & 0.105 \\
\hline
123 & 13.00 \\
 & -12.3 \\
\hline
 & 0.700 \\
 & -0.615 \\
\hline
 & 0.085
\end{array}
$$

$13 \div 123 \simeq 0.11$

Unit (2) (Sets)

Sets

The set is a collection of known objects that are clearly defined .

Elements of a set

The objects which a set contains are called “the elements of the set”

The listing methods

Capital letters are used to denote sets.

The elements listed or written inside a pair of braces { } .

The elements may be listed or written in any order.

It is not allowed to repeat an element when listing them.

The description methods

To express a set using the description method , we define the property which distinguishes and determines the elements of this set.

For example : express set B = { 2,4,6,8 } by using description method

B=the set of 1-digit even numbers and greater than 1

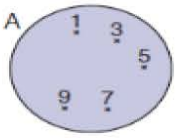
B= {b:b is one digit even number and greater than 1 }

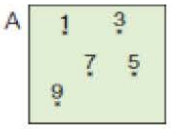
B= {b:b is even numbers between 1 and 9 }

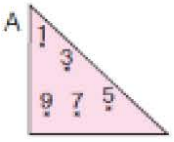
Representing sets by Venn diagrams

We represent every element of a set by putting a point or a mark as “X” , then we surround them by a suitable geometric shape as a triangle , a square , a circle or any closed curve . these

geometric shapes are called “Venn diagrams” related to the English scientist ”john Venn”. For example , A = {1, 3, 5, 7, 9}

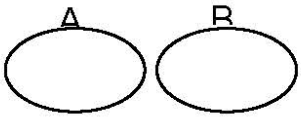




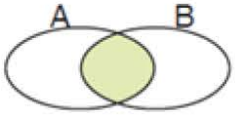


For any two different sets , there are three possibilities :

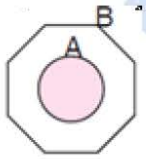
1)All elements of A are different from all elements of B , they are representing as



2) the two sets A and B have some elements in common, they are representing as



3)Each element of A exists also in B , they are represented as



Belonging of an element to a set

if a is an element of a set X , we can write a ∈ X , the symbol ∈ means “belongs to”.

the symbol ∉ denotes” the not belonging of an element to a set” .

Types of sets

1) A set containing no elements is called the null set or **empty** set and is denoted by the symbol "ϕ" or { }. {Cats that can fly} = { } = ϕ , {0} is not an **empty** set.
2) A set that contains a countable number of elements is called a **finite** set. we can easily count the number of its elements. {Letters in the word "Good"} = {G, o, d}.

3) A set that contains an uncountable number of elements is called an **infinite** set. we can not actually count its elements. { Whole numbers } = {1, 2, 3, ...}.

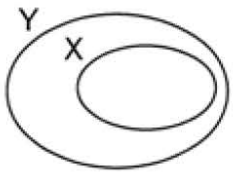
Note: a row of dots... is used to show that more numbers follow, but they have not all been listed.

equal sets

Sets which contain exactly the same elements are called equal sets {4, 2, 3} and {3, 4, 2} are equal sets. The elements may be listed or written in any order. It is not allowed to repeat an element when listing them.

Inclusion and subsets

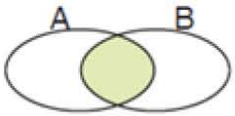
if all the elements of set X are also elements of set Y, then X is subset of Y, symbol "$\subset$" denotes the inclusion of one set in another set



symbol " $\not\subset$ " read as" is not a subset " , denotes the non inclusion of a set in another set .

the intersection of two sets

Is the set of all common elements in the two sets . It is denoted by the symbol "$\cap$"



If A and B are two non-empty sets , then :

1)$\phi \cap A = A \cap \phi = \phi$

2)If A = B , therefore $A \cap B = A = B$

3)If A⊂B , therefore A∩B= A

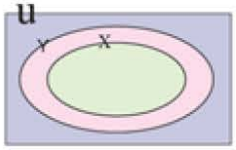
Union of two sets

The union of two sets A and B is that set which contains all the elements belonging to A or Y . It is denoted by the symbol " ∪" .

1) $\phi \cup A = A \cup \phi = A$
2) If A = B , therefore A∪B= A = B
3) If A⊂B , therefore A∪B= B

The universal set

Is the mother set which includes all the given subsets . It is denoted by "U".

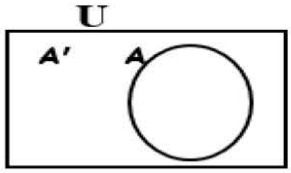


If U is the universal set and X is a subset of it , then

1) X ∩ U = X
2) X ∪ U = U

The complement of a set

If U is the universal set and A is the subset of , then the complement of A is the is the set in U but not in A



1) The complement of the complement of A is A itself , then $(A')' = A$

2) $A' \cap A = \phi$

3) The complement of the empty set "ϕ" is the universal set "U" , then $\phi' = U$

Difference between two sets

X difference Y : is the set of elements that belongs to X and does not belong to Y , it is written as " X - Y" .

Y difference X : is the set of elements that belongs to Y and does not belong to X , it is written as " Y - X " .

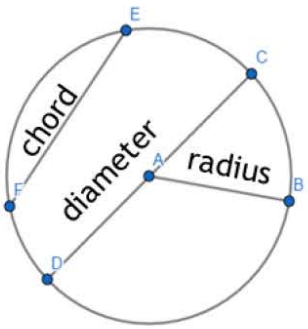
1) $X - U = \phi$, $U - X = X'$ " Where U is the universal set
2) $\phi - X = \phi$, $X - \phi = X$
3) $X - X = \phi$

The Circle :

Some important definitions:

The circle is a closed curve , all the points on it having the same distance from fixed point (center of the circle).

The radius of a circle : is a line segment whose endpoints are the center of the circle , and any point on the circle .



A chord in a circle : is a line segment that connects between any two points on the circle .

The diameter of a circle: is a chord that crosses the center of the circle .

Very important notes :

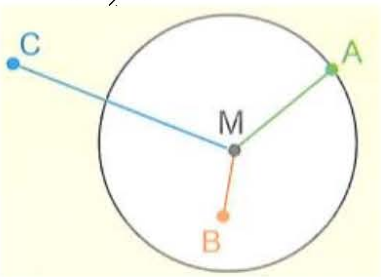
- the diameter of the circle is the longest chord.

-The length of any diameter in a circle is equal to twice the length of its radius (d=2×r).

- The length of any radius in a circle is equal to half the length of its diameter ($r=\frac{1}{2}d$)

If M is the circle of radius r :

1) The point A is on the circle M ($A \in circle\ M$) , then : MA=r
2) The point B is inside the circle M, then : MB< r



3) The point C is outside the circle M , then: MC> r

Drawing a triangle given the lengths of its three sides

The types of triangles can be classified according to:

1) **The length of its sides**
   a)equilateral triangle (all sides are equal in length)
   b) isosceles triangle (two sides equal in length one side different)
   c) scalene triangle (three sides different in length)

2) **the measure of its angles**

   a) right –angled triangle (has one right angle)
   b) acute- angled triangle (has three acute angles)
   c) obtuse –angled triangle (has one obtuse angle)

The altitudes of a triangle: is a line segment drown from the vertex of the triangle perpendicular to its corresponding base , or to its corresponding base extended.

- Any triangle whatever its type is has 3 altitude .
- The altitudes of an acute-angled triangle intersect at one point inside the triangle .
- The altitudes of a right-angled triangle intersect at one point which is the vertex of the right triangle .
- The altitudes of an obtuse -angled triangle intersect at one point outside the triangle

Experimental Probability

Experimental Probability = $\frac{Number\ of\ trials\ in\ which\ the\ outcome\ occurs}{Total\ number\ of\ trials}$

Sample Space

the sample space of an experimental is the set of all possible outcomes of this experiment . it is usually denoted by (s)

in an experiment , an event is any subset of the of the sample space of this experiment.

Theoretical probability

theoretical probability is finding the probability of events that come from a sample space of outcomes having equal chance to occur.

The probability of an event

The probability of an event to be occurred = $\frac{Number\ of\ outcomes\ of\ the\ event}{Number\ of\ all\ possible\ outcomes}$

Approximating to the nearest hundredth and thousandth and thousandth

[1] Complete:

1) 62.372 ≃ ..... (to the nearest hundredth) (sons abroad 2018)
2) 3.67≃ ..... .(to the nearest tenth) (sons abroad 2015)
3) 2.6237≃ ..... (to the nearest hundredth) (sons abroad 2016)
4) 37 days≃ ..... (to the nearest week) (sons abroad 2016)
5) 17.947≃ ..... To the nearest 2 decimal places
6) 5.345 ≃ ..... (To the nearest 0.01)
7) $2\frac{1}{8} \cong$ ..... (to the nearest two decimal places)
8) $8\frac{8}{5000} \simeq$ ..... (to the nearest $(\frac{1}{1000})$
9) 65.384 + 63.427 = ... ≃ .....[to the nearest hundredth]
10) $16\frac{27}{10000} \simeq$ ..... (To the nearest 0.001)
11) 37.4289 – 14.081 = ... ≃ .....[to the nearest thousandths]
12) 251.76 - $38\frac{1}{8}$ = ... ≅ ..... [to the nearest 0.01]

Comparing and ordering fractions

[1] Put the suitable relation (<) , (>) or (=) in the blanks:

(1) $\frac{3}{4}$ ☐ $\frac{3}{5}$

(2) $\frac{1}{7}$ ☐ $\frac{1}{3}$

(3) $\frac{9}{10}$ ☐ $\frac{3}{10}$

(4) $\frac{5}{9}$ ☐ $\frac{4}{9}$

(5) $2\frac{7}{9}$ ☐ $2\frac{5}{9}$

(6) $2\frac{1}{8}$ ☐ $\frac{17}{8}$

(7) $3\frac{2}{5}$ ☐ $\frac{7}{5}$

(8) $\frac{3}{7}$ ☐ $\frac{4}{7}$

(9) $2\frac{1}{4}$ ☐ $2\frac{1}{3}$

(10) $\frac{4}{12}$ ☐ 1

(11) 1 ☐ $\frac{3}{4}$

(12) $\frac{5}{3}$ ☐ $\frac{1}{2}$

(13) $\frac{3}{4}$ ☐ $\frac{2}{8}$

(14) $\frac{5}{6}$ ☐ $\frac{7}{8}$

(15) 0.7 ☐ $\frac{7}{3}$

(16) 2.7 ☐ $2\frac{7}{9}$

(17) 3.2 ☐ $3\frac{1}{2}$

(18) $4\frac{1}{3}$ ☐ 4.3

(19) 0.03 ☐ $\frac{3}{25}$

(20) 0.12 ☐ $\frac{6}{50}$

[2] Arrange each of the following:

(1) $\frac{2}{13}$, $\frac{7}{13}$, $\frac{4}{13}$, $\frac{10}{13}$

Descending order: .....

(2) $\frac{2}{10}$, $\frac{9}{10}$, $\frac{14}{10}$, 0.5 , $\frac{7}{10}$

Ascending order: .....

(3) $\frac{12}{5}$, $\frac{12}{7}$, $\frac{12}{17}$, $\frac{12}{13}$, $\frac{12}{15}$

Descending order: .....

(4) $\frac{2}{5}$, $\frac{2}{3}$, 1 , $\frac{2}{10}$, $\frac{2}{8}$

Ascending order: .....

[3] Arrange each of the following numbers:

(1) $\frac{11}{12}$, $\frac{5}{12}$, $\frac{2}{3}$, $\frac{3}{4}$, $\frac{5}{6}$

Ascending order: .....

(2) $\frac{3}{5}$, $\frac{1}{2}$, $\frac{9}{10}$, $\frac{1}{4}$

Descending order: .....

(3) $\frac{1}{2}$, 0.8 , $\frac{1}{4}$, 0.3 , $\frac{2}{5}$

Ascending order: .....

---

[4] Find the values of x that satisfies the relation $\frac{3}{8} < \frac{x}{8} < \frac{9}{8}$ such that is a whole number.

[5]_Word problems:

One day, Ramy walked $1\frac{7}{8}$ Km and Hoda walked $1\frac{9}{16}$ km. Which distance was greater?.....

(a) On three different days, Sameh swam $\frac{5}{16}$ km, $\frac{7}{8}$ km and $\frac{3}{4}$ km. arrange the distances in an ascending order.

.....

.....

Multiplying decimals by 10, 100 and 1000

[1] Complete:

(1) 100 × 7.787 = ...

(2) 0.341 × 1000 = ...

(3) 1000 × 6.7 = ...

(4) 24.61 × 1000 = ...

(5) 0.184 × 10000 = ...

(6) 7.5621 × 10000 = ...

(7) 2.63 × ..... = 2630

(8) 0.6201 × ..... = 620.1

(9) 55.423 × ..... = 5542.3

(10) 0.021 × ..... = 21

(11) ..... × 10 = 29.4

(12) ..... × 100 = 25.5

(13) 3.002 kg = ... gm

(14) L.E 728.9 = P.T .....

(15) 37.3 dm = ... cm

(16) 0.03 m^2 = ... dm^2

(17) 5.07 dm^2 = ... cm^2

(18) 5.7 L = ... ml

(19) (72.12+2.7)×10=.....

(20) (8.35-2.14)× 100=.....

Multiplying decimals

Multiplying a decimal by a whole number

[1] Find the product of each of the following:

(1) 7.2 × 0.9 = ...

(2) 1.6 × 0.04 = ...

(3) 0.12 × 0.3 = ...

(4) 0.625 × 0.7 = ...

(5) 1.2 × 0.37 = ...

(6) 1.25 × 0.24 = ...

[2] Compare the product of the following by putting "<,> or ="

(1) 7.3 × 0.28 ☐ 0.73 × 2.8

(2) 0.342 × 1.2 ☐ 3.42 × 0.12

(3) 172 × 0.003 ☐ 0.172 × 0.3

(4) 48.2 × 3.7 ☐ 0.482 × 37

(5) 4.2 × 1.53 ☐ 4.2 × 15.3

(6) 2.06 × 1.5 ☐ 2.06 × 0.3 × 0.5

[3] Word problems:

A car covers equal distances in equal times. If this car covered 24.53 kilometers in one hour , how many kilometers does this car cover in $2\frac{1}{2}$ hours. (our sons abroad 2016)

.....

The price of a bar of chocolate is L.E. 2.75 What is the cost of 15 bars of the same kind?

.....

If the price of one metre of cloth is L.E. 6.45 What is the cost of 2.4 metres of cloth?

.....

Multiplying Fractions

[1] Multiply, then write the answer in its simplest form:

(1) $\frac{3}{5} \times \frac{3}{8} =$ .....

(2) $9 \times \frac{5}{6} =$ .....

(3) $1\frac{2}{3} \times \frac{3}{10} =$ .....

(4) $7\frac{1}{2} \times \frac{2}{15} =$ .....

(5) $\frac{3}{4} \times 8\frac{2}{3} =$ .....

(6) $0.25 \times \frac{4}{5} =$ .....

(7) $\frac{4}{20} \times 0.8 =$ .....

(8) $\frac{3}{5} \times 1.5 =$ .....

[2] Complete:

(1) $\frac{2}{3}$ *of* $\frac{3}{5} =$ .....

(2) $\frac{4}{5}$ of a kilogram =..... gm

(3) $\frac{5}{6}$ of a month = ... days

Dividing Fractions

[1] Find the quotient of each of the following:

(1) $\frac{2}{7} \div \frac{5}{7}$ = ...

(2) $\frac{9}{10} \div \frac{3}{10}$ = ...

(3) $6 \div \frac{1}{3}$ = ...

(4) $12 \div \frac{3}{4}$ = ...

(5) $1\frac{1}{2} \div 3\frac{3}{4}$ = ...

(6) $4\frac{2}{3} \div 7$ = ...

(7) $2\frac{2}{5} \div 24$ = ...

(8) $\frac{2}{7} \div \frac{5}{7}$ = ...

[2] complete

(1) $\frac{3}{5} \times$ ..... $= 1$

(2) ..... $\times \frac{7}{8} = 1$

(3) ..... $\times 1\frac{1}{5} = 1$

[3] word problems

(1)How many kg. of oranges can you buy for L.E.$31\frac{1}{2}$ if the price of each kg. is L.E $4\frac{1}{2}$?

.....

(2) If the price of 14 pens is L.E. $10\frac{1}{2}$. Find the price of each pen.

.....

Dividing decimals by 10, 100, 1000

[1] Complete each of the following :

(1) 9.6 ÷ 10 =.....

(2) 68.3 ÷ 100 =.....

(3) 0.44 ÷ 100 =.....

(4) 49.21 ÷ 1000 =.....

(5) 48.2 ÷ 10000 =.....

(6) 3.75 ÷ 100 =.....

(7) 1.7 ÷ 10 =.....

(8) 5743.4 ÷ 1000 =.....

(9) 17.55 ÷ ..... = 0.1755

(10) 9876.2 ÷ ..... = 9.8762

(11) ..... ÷ 10 = 17.35

(12) ..... ÷ 100 = 4.599

(13) 3237 gm = ... Kg

(14) 0.7 gm = ... Kg

(15) 80 cm =..... m

(16) P.T. 561.5 = L.E. .....

(17) 734 ml = ... litre

[2] Put (<), (>) or (=):

1) 136.76 ÷ 100 ☐ 1367.4 ÷ 1000

2) 608.3 ÷ 100 ☐ 508.7 ÷ 10

3) 4.532 ÷ 10 ☐ 45.32 ÷ 100

4) 3721 ÷ 1000 ☐ 0.3721× 100

[3] word problems

A car consumes one liters of gasoline to travel 10 kilometers. How many litres of gasoline does it need to travel a distance of 534.8 kilometers?

.....

The ministry of education bought 1000 computers for L.E. 2349650 calculate the price of each computer.

.....

Dividing a whole number by a 3-digit number

[1] Find the quotient of each of the following:

1) 3978 ÷ 234 =

2) 37961 ÷ 493 =

3) 11183÷211=

4) 62160÷ 296=

[2] Choose the correct answer:

(1) **11664 ÷ 216 =…….** **(54 , 58 , 62 , 68)**

(2) 19708 ÷ 379 =……. **(48 , 52 , 54 , 62)**

(3) 37440÷ 234=……. **(160,170,200,190)**

[3] Word problems

(1)The product of multiplying 2 numbers is 9088 if one of them is 284 find the other number.

……

(2) A factory produces 235 pieces of cloth monthly, in how many months does it produce 26555 pieces of cloth?

……

(3)An owner of packing food factory wanted to pack 5904 kg of sugar equally in 492 packs. What is the weight of each pack? **.(our sons abroad 2019)**

……

Dividing by a decimal

[1] Find the quotient

1) **36.18 ÷ 0.09 =**

2) **3.375 ÷ 13.5 =**

3) **4.384 ÷ 0.32 =**

4) **2.67 ÷ 1.2 =**

5) $2\frac{1}{8} \div 0.125 =$

6) $\frac{17}{40} \div 0.85 =$

7) $9.568 \div 9\frac{1}{5} =$

8) Find a number when multiplied by 0.64 , then the product is 75.52.

9) Divide 375 by 0.5 , then add $5\frac{1}{4}$ to the quotient.

[2] Word problems:

(1) In one of the soft drink company 63.75 liter put in bottles each of capacity 0.75 liter .find the number of the needed bottles . (our sons abroad 2014)

.....

(2)A bundle of paper has a height of 4.5cm.if all its papers were of equal thickness where the thickness of each paper was 0.090 millimeters .Find how many papers does the bundle include.

.....

Infinite division

[1] Complete:

1) $\frac{7}{3} \cong$ ..... to the nearest $\frac{1}{10}$

2) $\frac{5}{9} \cong$ ..... to the nearest $\frac{1}{100}$

3) $\frac{3}{11} \cong$ ..... to the nearest $\frac{1}{1000}$

(1)2.3 (2)0.56 (3)0.273

[2] Find the quotient of each of the following approximated to the nearest $\frac{1}{10}$

1)9÷ 35

2) 24.31÷ 0.97

3) 53.27÷ 2.1

[3] Complete:

1) 39 days ≅ ..... weeks (to the nearest week)

2) 254 hr. ≅ ..... days (to the nearest day)

3) 67 months ≅ ..... years (to the nearest year)

[4] Word problems

A man has 44.1 kilograms of honey . if he want to pack it in 21 bottles .how many kilograms placed in each bottle ? (our sons abroad 2015)(2.1)

Unit (2)(Sets)

1) State which of the following is a set or not a set:

a) Beautiful cities in Egypt

b) Digits of the number 1982.

c) The letters of the word "Egypt".

d) Prime numbers between 5 and 25.

e) Intelligent pupils in the class.

2) Express each of the following sets by listing method:

a) A = the set of digits of the number 335011

b) B = the set of letters of the word "address"

c) D = the set of counting numbers.

d) F = the set of even numbers greater than 6.

e) G = the set of even numbers smaller than 6.

f) H = the set of even numbers between 4 and 11.

g) I = the set of odd numbers.

h) J = the set of odd numbers which greater than 2 and less than 10.

i) L = the set of prime numbers between 4 and 15.

3) Complete using (∈) or (∉):

a) 3 ..... { 3 , 5 }

b) 2 ..... {3 , 1 , 7 }

c) 5 ..... {15 , 35 }

d) Δ ..... { ○ , □ , Δ }

e) 1 ..... { 11 }

f) Y ..... the set of letters of the word "Egypt".

g) 20 ..... the set of digits of the number 2020.

h) 3 ..... the set of odd numbers.

4) Complete:

a) If 7 ∈ { 2 , x , 5 } then x = ...

b) If 5 ∈ { 7 , 9 , x } then x = ...

c) If $5 \in \{3, x+4\}$ then x = ...

5) In each of the following, find the value of x:

a) $\{x\} = \{33\}$ x = ...

b) $\{1, 14\} = \{x, 1\}$ x = ...

c) $\{3, 6, x\} = \{6, 3, 2\}$ x = ...

d) $\{x + 2\} = \{10\}$ x = ...

6) Complete using ($\subset$) or ($\not\subset$):

a) $\{1\}$ $\{1, 3\}$

b) $\{7, 8\}$ $\{3, 1, 7\}$

c) $\{1, 2\}$ $\{1, 2, 3\}$

d) $\{7\}$ $\{17, 77\}$

e) $\{4, 5\}$ $\{54\}$

f) $\varnothing$ $\{0\}$

g) $\{5, 2\}$ $\varnothing$

7) Put the suitable sign ($\not\subset$, $\subset$, $\in$ or $\notin$):

a) $\{2, 3\}$ $\{1, 2, 3\}$

b) $\{1, 2\}$ $\{2, 3, 4\}$

c) b $\{b, c\}$

d) $\{a, b\}$ $\{b, a\}$

e) 2 $\{22, 44\}$

f) 0 $\varnothing$

g) 52 the set of digits of the number 5252

8) Find each of the following:

a) $\{5, 6\} \cap \{4, 5\}$ = ...

b) $\{2, 3, 4\} \cap \{3, 5, 2, 6\}$ = ...

c) $\{5, 3\} \cap \{2, 4, 5\} =$ .....

d) $\{2\} \cap \{22\} =$ .....

e) $\{3, 6\} \cap \{6, 3\} =$ .....

f) $\{3, 6\} \cap \varnothing =$ .....

g) $\{1, 2, 6\} \cap \{1, 26\} =$ .....

h) $\varnothing \cap \varnothing =$ .....

i) $\{35\} \cap \{53\} =$ .....

9) Put the suitable sign ($\not\subset$, $\subset$, $\in$ or $\notin$):

a) 3 $\{3, 4, 5\} \cap \{2, 3, 4\}$

b) $\{3, 4\}$ $\{3, 4, 7\} \cap \{5, 4, 3\}$

c) $\{2\}$ $\{5, 2, 3\} \cap \{1, 2, 5\}$

d) $\{6\}$ $\{5\} \cap \{6\}$

e) 15 $\{5\} \cap \{1\}$

f) $\{13\}$ $\{13\} \cap \{3\}$

g) 2 $\{2, 3\} \cap \{3, 2\}$

10) Complete:

a) If $a \in (X \cap Y)$, then $a \in$ ..... and $a \in$ .....

b) If $X \subset Y$, then $X \cap Y =$ .....

c) If $X \cap Y = Y$, then ..... $\subset$ .....

d) $X \cap \varnothing =$ .....

e) $X \cap X$ = ...

11) Find each of the following:

a) $\{2\} \cup \{4\}$ = ...

b) $\{1, 5\} \cup \{1, 3\}$ = ...

c) $\{1, 2, 12\} \cup \{2, 3, 12\}$ = ...

d) $\{a, b, c\} \cup \{a, b, h\}$ = ...

e) $\{3\} \cup \{33\}$ = ...

f) $\{4\} \cup \{4\}$ = ...

g) $\{1, 4, 6\} \cup \varnothing$ = ...

h) $\{0\} \cup \{20\}$ = ...

12) Complete:

a) $X \cap \varnothing$ = ... and $X \cup \varnothing$ = ...

b) $X \cap X$ = ... and $X \cup X$ = ...

c) $\varnothing \cap \varnothing$ = ... and $\varnothing \cup \varnothing$ = ...

13) Represent the two sets A and B by a Venn diagram, then find A∩B and A∪B:

a) $A = \{4, 6, 8\}$ $B = \{3, 5, 7\}$

$A \cap B$ = ... $A \cup B$ = ...

b) $A = \{c, d, e, f\}$ $B = \{d, e, l\}$

$A \cap B$ = ... $A \cup B$ = ...

c) $A = \{1, 2, 3, 4\}$ $B = \{2, 3\}$

$A \cap B =$ ..... $A \cup B =$ .....

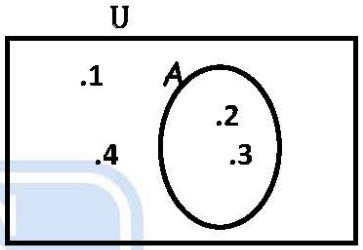
14) In the opposite Venn diagram , complete:

a) U=.....

b) A = ...

c) A' = ...

d) $A \cap A' =$ .....



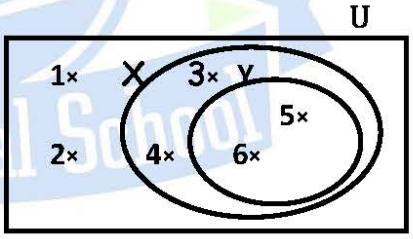
15) In the opposite Venn diagram, write in the listing method:(in Examour Sons abroad 2016)

a) $X \cap Y =$ .....

b) $X \cup Y =$ .....

c) $X - Y =$ .....

d) $Y - X =$ .....



16) Look at the opposite Venn diagram, then complete:

a) U=.....

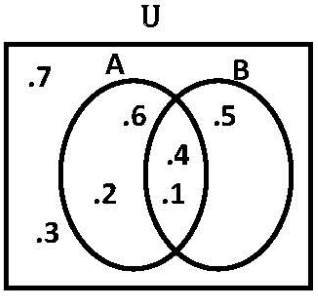
b) A = ...

c) B = ...

d) $A \cup B =$ .....

e) $A \cap B =$ .....

f) A' = ...



g) B'= .....

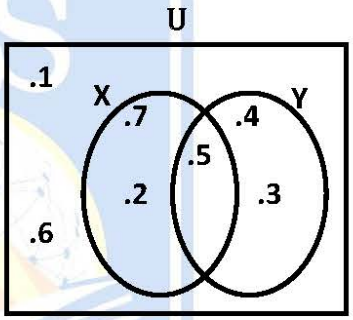
h) (A ∪ B)' = ...

i) (A ∩ B)' = ...

j) A' ∪ B' = ...

k) A' ∩ B' = ...

17) Look at the opposite Venn diagram, then complete:



a) X=.....

b) Y= .....

c) X ∪ Y=.....

d) X ∩ Y = ...

e) X'=.....

f) Y'=.....

g) (X ∪ Y)' = ...

h) (X ∩ Y)'=.....

18) complete:

1) { 1 , 2 , 4 } – { 2 , 4 , 6 } = ...

2) { a , b , c , d } – { a , b , c , o } = ...

3) { 7 , 8 } – { 8 , 7 } = ...

4) { 2 , 5 } – { 3 , 4 } = ...

5) ∅ – { 1 , 2 , 3 } = ...

6) { 5 , 6 } – ∅ = ...

19) In the opposite Venn diagram, write in listing method:

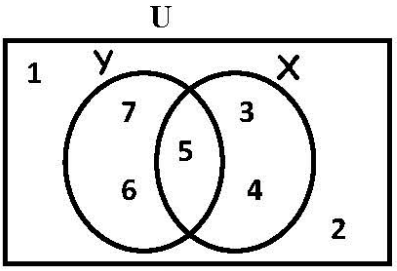
(our sons abroad 2014)

(1) X ⋂ Y = ...

(2) X⋃Y=.....

(3) X – Y = ...

(4) Y′ = ...



20) In the opposite Venn diagram, write in listing methods:

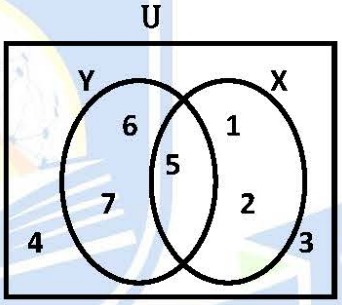
(in Exam sons abroad 2016)

a) X ⋂ Y = ...

b) X⋃ Y = ...

c) X – Y = ...

d) Y' = ...



21) If U ={1,2,3,4,5,6,7,8,9,10} ,X ={1,2,3,4} and Y = {3,4,5,8}, then find:

a) X ⋂ Y = ...

b) X⋃Y=.....

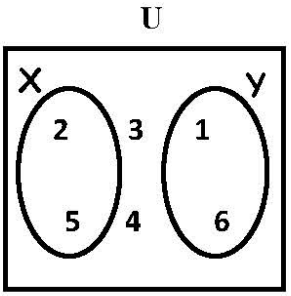
c) X'=.....

d) Y'= .....

e) X – Y = ...

f) Y – X = ...

22) Look at the opposite Venn diagram, then complete:



(1) X ⋂ Y = ...

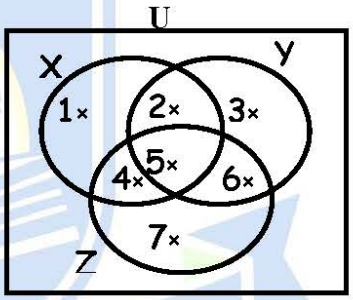
(2) X ⋃ Y= .....

(3) U–X=.....

(4) U–Y = ...

(5) (X ⋃ Y)' = ...

23) Look at the opposite Venn diagram, then complete:



(1) U=.....

(2) X=.....

(3) Y=.....

(4) Z=.....

(5) X ⋂ Y = ...

(6) Z ⋂ Y = ...

(7) Y – X = ...

24) Choose the correct answer:

1) 1 ..... {2, 1, 4} ⋂ {3, 1, 4}

a)⊄

b)∈

c) ∉

d)⊂

2) {a, b} ..... { a , b , c } ∩ { a , c , d }

a)⊄

b)∈

c) ∉

d)⊂

3) If X ⊂ Y , then X ∩ Y = ...

a) { 0 }

b) X

c) ϕ

d) Y

4) { 3 , 2 , 5 } ∩ { 32 , 5 } = ...

a) { 3 , 2 , 5 }

b) { 32 , 5 }

c) { 5 }

d) { 32 }

5) { 8 } ∪ { x } ={ 8 , 3 } , then { x } = ...

a) { 0 }

b) { 5 }

c) ϕ

d) { 3 }

6) { 1 , 2 } ∪ { 1 , 3 , 5 } =

a) { 2 , 3 , 5 }

b) { 1 }

c) { 1 ,2 , 3 , 5 }

d) { }

7) { 0 } ∪ ϕ = ...

a) ϕ

b) { 0 }

c) { 1 }

d) { }

8) U= { 1 , 2 , 3 , 4 , 5 } , x = { 3 , 4} , then x′= .....

a) { 1 ,2 , 5 }

b) { 1 }

c) { 5 }

d) { }

9) If x is a set , then x ∩ x′ =.....

a) U

b) x

c) x′

d) { }

10) X= { 2 , 4 , 6 , 8 } , Y = {2 , 3 , 4} , then X – Y = ...

a) { 6 , 8 }

b) { 6 }

c) { 8 }

d) { }

11) { 1 , 2 } ∪ { 1 , 3 , 5 } =.....

a) { 2 , 3 , 5 }

b) { 1 }

c) { 1 ,2 , 3 , 5 }

d) { }

12) { 2 , 4 , 6 , 8 , ... } is ..... Set

a) a finite

b) an infinite

c) an empty

The circle

[1] Complete the following:

1) Any line segment that joins two points on the circle is called .....

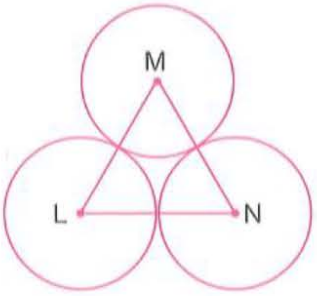
(our sons abroad 2019,2018,2016)

2) The chord of a circle is a line segment that connects .....
3) The longest chord in a circle is called .....
4) The midpoint of any diameter in a circle is .....of the circle.
5) The diameter length =2× ..... length
6) To draw a circle whose diameter length is 7.2 cm. set the compasses to a length equal to .....cm
7) any chord passing through the center of the circle is called.....
8) If M is a circle whose diameter length is 8 cm .where MA=7cm . then the point A is located ..... the circle.
9) If A and B belong to the circle M where M∈ $\overline{AB}$, then $\overline{AB}$ is called a ..... in the circle.
10) If $\overline{AB}$ and $\overline{AC}$ are two chords in a circle ,then $\overline{BC}$ is a .....in the same circle.

[2] In the opposite figure :

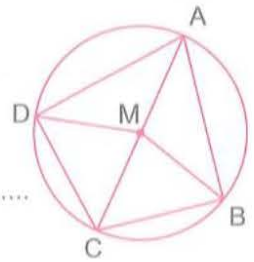
if the length of each radius in the three circles is 3cm . then the perimeter of the triangle MLN equals .....cm

(18)



[3] In the opposite figure :

a) The radii of the circle are .....,.....,.....,.....

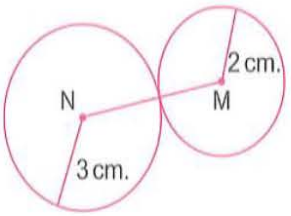


b) The diameter of the circle is .....

c) The chord of the circle are .....,.....,.....,.....

[4] In the opposite figure :

M and N are two circles , then
the length of $\overline{MN}$ equals.....cm



[5] Draw the circle M with radius length 5 cm, draw, the diameter $\overline{AB}$ and the chord $\overline{BC}$ where BC = 8 cm and join $\overline{AC}$, then find:

(a) The length of the chord $\overline{AC}$.

(b) The $m(\angle C)$.

[6] Draw a circle whose center is M and radius length 4cm.then draw two radii $\overline{MX}$, $\overline{MY}$ and the included angle between them measure 60°, then draw $\overline{XY}$ and find the length of $\overline{XY}$

Drawing a triangle

[1] Draw the triangle ABC in which AC=6cm , BC= 5cm and m(‹c)=150°.draw $\overline{AD}$ perpendicular to $\overrightarrow{BC}$, then measure the length of $\overline{AD}$. (our sons abroad 2018)

[2] Draw the triangle XYZ in which XY=6cm ,YZ=10cm and ZX=8cm ,find the type of the triangle according to the measure of its angles, then draw altitude from X to $\overline{YZ}$ and find its length.

(our sons abroad 2019 2015,)

[3] Draw the triangle XYZ in which XY=8cm ,YZ=6cm and ZX=10cm ,determine the type of the triangle according to the measure of its angles, then draw from Y the perpendicular line segment to $\overline{XZ}$ and find its length.

(our sons abroad 2016)

[4] Draw the equilateral triangle ABC whose side length is equal to 5cm ,draw the circle A and its radius 5cm, then complete:

a) $\overline{AB}$ is called ..... in the circle

b) $\overline{AC}$ is called ..... in the circle

c) $\overline{BC}$ is called ..... in the circle (our sons abroad 2014)

Unit (4) (Probability)

1) Choose the correct answer:

1) Tossing a regular coin, the probability of landing a head = ...

a) $\frac{1}{3}$

b) $\frac{1}{2}$

c) $\frac{3}{4}$

d) 1

2) The probability of an impossible event = ...

a) $\varnothing$
b) 1
c) 0
d) 2

3) The probability of the certain event = ...

a) 0
b) 1
c) 100
d) $\varnothing$

4) The probability that the elephant flies is .....

a) 0
b) 1
c) 10
d) $\varnothing$

5) It is ..... that the sun rises from east.

a) Possible
b) Impossible
c) Sure

6) If a coin is tossed 600 times, then the nearest expected number for the tail to appear is

a) 220
b) 255
c) 298
d) 356

7) A basket contains cards numbered from 1 to 20., If a card was drawn at random, what is the probability that the number written on the card is divisible by 6?

a) $\frac{3}{20}$
b) $\frac{4}{20}$
c) $\frac{5}{20}$
d) $\frac{6}{20}$

8) If there are 3 blue, 6 violet, 7 orange and 8 red sectors on a spinner, what is the probability that the pointer stopping on the red color?

a) $\frac{1}{80}$

b) $\frac{1}{24}$

c) $\frac{1}{2}$

d) $\frac{1}{3}$

9) When rolling a die once, the probability of a number greater than 4 appearing on the top side is .....

a) $\frac{1}{6}$

b) $\frac{1}{3}$

c) $\frac{1}{2}$

d) 1

10) Gamal is in a grade 5 class of 36 students. 16 of them are girls, if a student is selected at random from the class, What is the probability that the student is a boy?

a) $\frac{4}{9}$

b) $\frac{1}{2}$

c) $\frac{5}{9}$

d) $\frac{1}{36}$

11) A letter of the word "Ahmed" is selected randomly. what is the probability of selecting the letter "d"?

a) $\frac{1}{5}$

b) $\frac{1}{4}$

c) $\frac{1}{2}$

d) 1

2) If we roll a regular number cube (die), complete the following:

(1) The probability of getting an even number = ...

(2) The probability of getting an odd number = ...

(3) The probability of getting a prime number = ...

(4) The probability of getting the number 5 = ...

(5) The probability of getting a number less than 3 = ...

(6) The probability of getting a number more than 2 = ...

(7) The probability of getting the number 7 = ...

(8) The probability of getting a number less than 7 = ...

(9) The probability of getting a number divisible by 3 = ...

3) A bag contains 5 white balls, 8 red balls and 7 black balls. One ball is taken out at random. Calculate the probability that the ball is:

(1) Red = ...

(2) Green = ...

(3) Black = ...

(4) White or black = ...

(5) Blue = ...

SHEET (1)

Approximating to the nearest hundredth and thousandth

[1] Approximate each of the following numbers to the nearest hundredth:

(1) 76.514 ≅ …… (2) 52.608 ≅ ……

(3) 175.325 ≅ …… (4) 21.8253 ≅ ……

(5) 52.1248 ≅ …… (6) 0.737 ≅ ……

(7) 23.297 ≅ …… (8) 0.996 ≅ ……

(9) 0.002 ≅ …… (10) $\frac{5685}{1000}$ ≅ ……

(11) $\frac{25698}{10000}$ ≅ …… (12) $2\frac{1}{8}$ ≅ ……

(13) $3\frac{17}{500}$ ≅ …… (14) $31\frac{3}{1000}$ ≅ ……

---

[2] Approximate each of the following numbers to the nearest thousandth:

(1) 41.6247 ≅ …… (2) 2.0509 ≅ ……

(3) 154.1015 ≅ …… (4) 4.6798 ≅ ……

(5) 19.9996 ≅ …… (6) $16\frac{27}{10000}$ ≅ ……

(7) $94\frac{129}{10000}$ ≅ …… (8) $8\frac{8}{5000}$ ≅ ……

(9) $\frac{8649}{10000}$ ≅ …… (10) 0.0004 ≅ ……

---

[3] Choose the correct answer:

(1) 5.345 ≅ …… To the nearest 0.01 [5.346 , 5.35 , 5 , 5.3]

(2) 2.5786 ≅ …… To the nearest 0.001 [2.579 , 2.58 , 2.578 , 2.576]

(3) 17.947 ≅ …… To the nearest 2 decimal places

[17.948 , 17.95 , 17.90 , 17.94]

(4) 736.592 ≅ 736.59 to the nearest ……[tenth , unit , hundredth , $\frac{1}{1000}$]

(5) 4.559 ≅ 4.6 to the nearest …… [tenth , unit , hundredth , $\frac{1}{1000}$]

(6) $3\frac{1}{8}$ ≅ …… to the nearest hundredth [3.10 , 3.12 , 3.13]

---

[4] Find the result:

(1) 2.253 + 12.564 = …… ≅ ……

[to the nearest $\frac{1}{100}$]

(2) 65.384 + 63.427 = …… ≅ ……

[to the nearest hundredth]

(3) 37.4289 – 14.081 = …… ≅ ……

[to the nearest $\frac{1}{1000}$]

(4) 729.72 – 122.743 = …… ≅ ……

[to the nearest $\frac{1}{100}$]

(5) 4357 ÷ 1000 = …… ≅ ……

[to the nearest $\frac{1}{100}$]

(6) 4357 ÷ 100 = …… ≅ ……

[to the nearest $\frac{1}{10}$]

(7) 10 – 3.5116 = …… ≅ ……

[to the nearest $\frac{1}{1000}$]

(8) 251.76 - $38\frac{1}{8}$ = …… ≅ ……

[to the nearest 0.01]

SHEET (2)

Comparing and ordering fractions

[1] Put the suitable relation (<) , (>) or (=) in the blanks:

(1) $\frac{1}{5}$ ☐ $\frac{4}{5}$

(2) $\frac{9}{10}$ ☐ $\frac{3}{10}$

(3) $2\frac{7}{9}$ ☐ $2\frac{5}{9}$

(4) $3\frac{2}{5}$ ☐ $\frac{7}{5}$

(5) $\frac{3}{4}$ ☐ $\frac{1}{4}$

(6) $\frac{5}{9}$ ☐ $\frac{4}{9}$

(7) $2\frac{1}{8}$ ☐ $\frac{17}{8}$

(8) $\frac{3}{7}$ ☐ $\frac{4}{7}$

---

[2] Put the suitable relation (<) , (>) or (=) in the blanks:

(1) $\frac{3}{4}$ ☐ $\frac{3}{5}$

(2) $\frac{2}{8}$ ☐ $\frac{2}{4}$

(3) $2\frac{7}{9}$ ☐ $2\frac{7}{8}$

(4) $\frac{1}{7}$ ☐ $\frac{1}{3}$

(5) $\frac{8}{25}$ ☐ $\frac{8}{13}$

(6) $2\frac{1}{2}$ ☐ $2\frac{1}{9}$

---

[3] Arrange each of the following numbers:

(1) $\frac{2}{11}$, $\frac{7}{11}$, $\frac{4}{11}$, $\frac{10}{11}$

Ascending order: ……

(2) $\frac{13}{7}$, $\frac{5}{7}$, $\frac{9}{7}$, $\frac{4}{7}$, $\frac{11}{7}$

Descending order: ……

(3) $\frac{2}{10}$, $\frac{9}{10}$, $\frac{14}{10}$, 0.5 , $\frac{7}{10}$

Ascending order: ……

(4) $\frac{5}{9}$, 1 , $\frac{2}{9}$, $\frac{7}{9}$

Descending order: ……

[4] Arrange each of the following numbers:

(1) $\frac{7}{13}$, $\frac{7}{5}$, $\frac{7}{9}$, $\frac{7}{4}$, $\frac{7}{11}$

Ascending order: ……

(2) $\frac{12}{5}$, $\frac{12}{7}$, $\frac{12}{17}$, $\frac{12}{13}$, $\frac{12}{15}$

Descending order: ……

(3) $\frac{2}{5}$, $\frac{2}{3}$, 1 , $\frac{2}{10}$, $\frac{2}{8}$

Descending order: ……

[5] Put the suitable relation (<) , (>) or (=) in the blanks:

(1) $\frac{3}{4}$ ☐ $\frac{2}{5}$

(2) $\frac{7}{9}$ ☐ $\frac{3}{4}$

(3) $\frac{4}{5}$ ☐ $\frac{3}{7}$

(4) $2\frac{1}{4}$ ☐ $2\frac{1}{3}$

(5) 1 ☐ $\frac{3}{4}$

(6) $\frac{3}{4}$ ☐ $\frac{2}{8}$

(7) 0.7 ☐ $\frac{7}{3}$

(8) 3.2 ☐ $3\frac{1}{2}$

(9) 0.03 ☐ $\frac{3}{25}$

(10) $\frac{5}{8}$ ☐ $\frac{2}{3}$

(11) $\frac{5}{2}$ ☐ $\frac{3}{5}$

(12) $\frac{7}{12}$ ☐ $\frac{4}{5}$

(13) $\frac{4}{12}$ ☐ 1

(14) $\frac{5}{3}$ ☐ $\frac{1}{2}$

(15) $\frac{5}{6}$ ☐ $\frac{7}{8}$

(16) 2.7 ☐ $2\frac{7}{9}$

(17) $4\frac{1}{3}$ ☐ 4.3

(18) 0.12 ☐ $\frac{6}{50}$

[6] Arrange each of the following numbers:

(1) $\frac{11}{12}$, $\frac{5}{12}$, $\frac{2}{3}$, $\frac{3}{4}$, $\frac{5}{6}$

Ascending order: ……

(2) $\frac{5}{6}$, $\frac{3}{4}$, $\frac{1}{2}$, $\frac{7}{8}$

Descending order: ……

(3) $\frac{3}{5}$, $\frac{1}{2}$, $\frac{9}{10}$, $\frac{1}{4}$

Descending order: ……

(4) $\frac{1}{2}$, 0.8 , $\frac{1}{4}$, 0.3 , $\frac{2}{5}$

Ascending order: ……

---

[7] Real life problems:

(a) One day, Ramy walked $1\frac{7}{8}$ Km and Hoda walked $1\frac{9}{16}$ km. Which distance was greater?

……

……

……

……

(b) On three different days, Sameh swam $\frac{5}{16}$ km, $\frac{7}{8}$ km and $\frac{3}{4}$ km. arrange the distances in an ascending order.

……

……

……

……

SHEET (3)

Multiplying decimals by 10, 100 and 1000

[1] Complete:

(1) 0.643 × 100 = ...

(2) 3.2 × 10 = ...

(3) 72.14 × 100 = ...

(4) 0.045 × 100 = ...

(5) 100 × 7.787 = ...

(6) 1000 × 6.7 = ...

(7) 0.184 × 10000 = ...

(8) 3.18 × 10 = ...

(9) 12.65 × 10 = ...

(10) 9.7 × 100 = ...

(11) 3.2172 × 1000 = ...

(12) 0.341 × 1000 = ...

(13) 24.61 × 1000 = ...

(14) 7.5621 × 10000 = ...

[2] Choose the correct answer:

(1) 5.67 × 10 = ... [567 , 0.567 , 56.7 , 0.0567]

(2) 98.7 × 100 = ... [987 , 9870 , 0.987 , 0.0987]

(3) 6.172 × 100 = ... [617.2 , 61.72 , 6172 , 0.06172]

(4) 0.067 × 1000 = ... [6.7 , 67 , 0.067 , 670]

(5) 21.3 × 10 = ... [2130 , 2.13 , 213 , 0.0213]

(6) 0.00008 × 1000 = ... [0.8 , 0.08 , 8 , 80]

(7) 0.27 × 100 = ... [2.7 , 270 , 0.027 , 27]

(8) 69.25 × 10 = ... [7 , 69 , 692 , 693] to the nearest unit

(9) 5.3553 × 1000 = ... to the nearest whole number
[535.6 , 535.5 , 5355 , 53.55]

(10) 6.235 × 10 = ... to the nearest tenth
[62.2 , 62.3 , 62.4 , 62.5]

[3] Put the suitable relation (<) , (>) or (=) in the blanks:

(1) 4.72 × 10 ☐ 0.472 × 100

(2) 72.15 × 10 ☐ 0.07215 × 1000

(3) 2.4 × 10 ☐ 0.24 × 100

(4) 3.251 × 100 ☐ 325.1 × 100

(5) 0.723 × 1000 ☐ 0.0732 × 100

(6) 6.08 × 1000 ☐ 60.8 × 10

(7) 9.15 × 100 ☐ 91.5 × 100

(8) 1.25 × 100 ☐ 0.0125 × 10

[4] Complete:

(1) 25.69 × ..... = 256.9

(2) ..... × 0.254 = 2.54

(3) 2.63 × ..... = 2630

(4) 55.423 × ..... = 5542.3

(5) ..... × 10 = 29.4

(6) 4.321 × ..... = 4321

(7) 7.5 × ..... = 750

(8) 0.6201 × ..... = 620.1

(9) 0.021 × ..... = 21

(10) ..... × 100 = 25.5

[5] Complete:

(1) 87.02 km = ... m

(2) 2.05 m = ... cm

(3) 24.5 m = ... cm

(4) 3.002 kg = ... gm

(5) 37.3 dm = ... cm

(6) 5.07 dm^2 = ... cm^2

(7) 3.2 ton = ... kg

(8) L.E 6.5 = P.T .....

(9) 2.589 m = ... cm

(10) L.E 728.9 = P.T .....

(11) 0.03 m^2 = ... dm^2

(12) 5.7 L = ... ml

SHEET (4)

Multiplying decimals

Multiplying a decimal by a whole number

[1] Find the product:

1) 0.15 × 2 = ……

2) 0.819 × 8 = ……

3) 1.374 × 6 = ……

4) 3.7 × 0.6 = ……

5) 2.03 × 0.07 = ……

6) 9.4 × 6.8 = ……

+ …… = ……

7) 98.21 × 0.11 = ……

+ …… = ……

8) 0.67 × 2.8 = ……

+ …… = ……

9) 37 × 0.002 = ……

10) 1.89 × 5.8 = ……

+ …… = ……

11) 2.3 × 0.004 = ……

12) 16.7 × 12.3 = ……

+ ……

+ …… = ……

[2] Find the product of each of the following:

(1) 75 × 0.1 = ...

(2) 9246 × 0.001 = ...

(3) 2.37 × 5 = ...

(4) 7.2 × 0.9 = ...

(5) 0.12 × 0.3 = ...

(6) 1.2 × 0.37 = ...

(7) 342 × 0.01 = ...

(8) 36.25 × 0.1 = ...

(9) 0.251 × 9 = ...

(10) 1.6 × 0.04 = ...

(11) 0.625 × 0.7 = ...

(12) 1.25 × 0.24 = ...

[3] Choose the correct answer:

(1) 2.3 × 4 = ... [9.2 , 92 , 82 , 7.2]

(2) 0.2 × 6.3 = ... [1.26 , 12.6 , 126 , 1.36]

(3) 0.56 × 0.2 = ... [11.12 , 0.112 , 11.2 , 0.0112]

(4) 0.676 × 0.1 = ... [67.6 , 0.0676 , 16.76 , 6706]

(5) 0.555 × 0.3 = ... [0.1665 , 1.665 , 16.65 , 166.5]

(6) 3.4 × 6.2 = ... [2.108 , 21.08 , 210.8 , 2108]

(7) 125 × 0.8 = ... [100 , 1000 , 10 , 0.1]

[4] Put the suitable relation (<) , (>) or (=) in the blanks:

(1) 0.3 × 1.5 ☐ 3 × 1.5

(2) 7.5 × 0.02 ☐ 7.5 × 0.2

(3) 13.6 × 0.4 ☐ 0.136 × 0.4

(4) 7.3 × 0.28 ☐ 0.73 × 2.8

(5) 0.342 × 1.2 ☐ 3.42 × 0.12

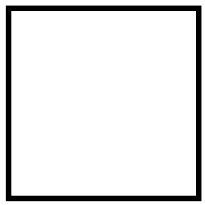
(6) 172 × 0.003 ☐ 0.172 × 0.3

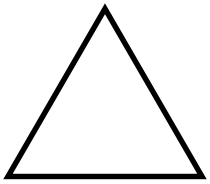
(7) 48.2 × 3.7 ☐ 4.82 × 37

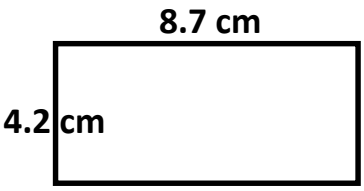
(8) 4.2 × 1.53 ☐ 4.2 × 15.3

(9) 2.06 × 1.5 ☐ 2.06 × 0.3 × 0.5

[5] calculate the perimeter of each of the following gures:







[6] Calculate the area of a square of side length 2.4 cm approximating it to the nearest tenth.

……

[7] If the length of a rectangle is 2.65 cm and its width is 1.5 cm, calculate its area approximating it to the nearest hundredth.

……

[8] Karim wants to buy 3 T-shirts that cost L.E. 45.75 each. How much will cost together?

……

[9] Noha bought 5 books for L.E. 15.5 each. What is the price of these books?

……

[10] The price of a bar of chocolate is L.E. 2.75 What is the cost of 15 bars of the same kind?

……

[11] If the price of one metre of cloth is L.E. 6.45 What is the cost of 2.4 metres of cloth?

……



SHEET (5)

Multiplying Fractions

[1] Find the result:

(1) $\frac{3}{4} \times \frac{5}{7} =$ .....

(2) $\frac{4}{5} \times \frac{6}{7} =$ .....

(3) $\frac{5}{6} \times \frac{5}{7} =$ .....

(4) $\frac{3}{5} \times \frac{3}{8} =$ .....

(5) $\frac{5}{9} \times \frac{2}{3} =$ .....

[2] Multiply, then write the answer in its simplest form:

(1) $\frac{1}{8} \times \frac{2}{3} =$ .....

(2) $\frac{1}{2} \times \frac{4}{5} =$ .....

(3) $\frac{2}{9} \times \frac{3}{14} =$ .....

(4) $\frac{2}{9} \times \frac{3}{8} =$ .....

(5) $\frac{3}{4} \times \frac{8}{9} =$ .....

(6) $\frac{4}{9} \times \frac{3}{16} =$ .....

(7) $\frac{3}{4} \times \frac{20}{27} =$ .....

[3] Multiply, then write the answer in its simplest form:

(1) $\frac{3}{5} \times 15 =$ .....

(2) $4 \times \frac{1}{4} =$ .....

(3) $\frac{2}{7} \times 21 =$ .....

(4) $\frac{5}{6} \times 24 =$ .....

(5) $9 \times \frac{5}{6} =$ .....

(6) $\frac{1}{3} \times 12 =$ .....

[4] Multiply, then write the answer in its simplest form:

(1) $\frac{3}{5} \times 5\frac{1}{2} =$ .....

(2) $1\frac{2}{3} \times \frac{3}{10} =$ .....

(3) $7\frac{1}{2} \times \frac{2}{15} =$ .....

(4) $\frac{3}{4} \times 8\frac{2}{3} =$ .....

(5) $2\frac{2}{3} \times 6 =$ .....

(6) $3\frac{3}{4} \times \frac{8}{15} =$ .....

[5] Multiply, then write the answer in its simplest form:

(1) $0.25 \times \frac{4}{5} =$ .....

(2) $\frac{4}{20} \times 0.8 =$ .....

(3) $\frac{3}{5} \times 1.5 =$ .....

[6] Find the result:

(1) $\frac{1}{3}$ *of* $\frac{2}{5} =$ .....

(2) $\frac{2}{3}$ *of* $\frac{3}{5} =$ .....

(3) $\frac{4}{5}$ *of* $25 =$ .....

[7] Complete:

(1) $\frac{3}{4}$ **of an hour = ... minutes**

(2) $\frac{3}{4}$ **of a metre = ... cm**

(3) $\frac{4}{5}$ **of a kilogram = ... gm**

(4) $\frac{5}{6}$ **of a month = ... days**

SHEET (6)
Dividing Fractions

[1] Find the reciprocal of each of the following:

(1) $\frac{2}{5}$ $\xrightarrow{reciprocal}$ .....

(2) $\frac{3}{7}$ $\xrightarrow{reciprocal}$ .....

(3) $2\frac{1}{2}$ $\xrightarrow{reciprocal}$ .....

(4) $3\frac{1}{5}$ $\xrightarrow{reciprocal}$ .....

(5) $7\frac{1}{3}$ $\xrightarrow{reciprocal}$ .....

(6) $5\frac{3}{4}$ $\xrightarrow{reciprocal}$ .....

[2] Find the quotient of each of the following:

(1) $\frac{2}{5} \div \frac{3}{5} =$ .....

(2) $\frac{2}{3} \div \frac{1}{6} =$ .....

(3) $\frac{4}{5} \div \frac{1}{2} =$ .....

(4) $\frac{2}{7} \div \frac{5}{7} =$ .....

(5) $\frac{4}{10} \div \frac{6}{10} =$ .....

(6) $\frac{1}{2} \div \frac{1}{12} =$ .....

(7) $\frac{9}{10} \div \frac{3}{10} =$ .....

[3] Find the result:

(1) $6 \div \frac{1}{3} =$ .....

(2) $12 \div \frac{3}{4} =$ .....

(3) $10 \div \frac{5}{7} =$ .....

(4) $11 \div \frac{11}{7} =$ .....

(5) $\frac{2}{5} \div 6 =$ .....

[4] Find the quotient:

(1) $6 \div 1\frac{1}{2} =$ .....

(2) $8 \div 1\frac{3}{5} =$ .....

(3) $10 \div 3\frac{1}{5} =$ .....

(4) $1\frac{1}{2} \div 3\frac{3}{4} =$ .....

(5) $4\frac{2}{3} \div 7 =$ .....

(6) $2\frac{2}{5} \div 24 =$ .....

(7) $4\frac{1}{2} \div \frac{1}{2} =$ .....

(8) $6\frac{2}{3} \div \frac{5}{6} =$ .....

(9) $1\frac{1}{2} \div 3\frac{3}{4} =$ .....

(10) $\frac{3}{4} \div 7\frac{1}{2} =$ .....

[5] Complete:

(1) $\frac{3}{5} \times$ ..... $= 1$

(2) ..... $\times \frac{7}{8} = 1$

(3) ..... $\times 1\frac{1}{5} = 1$

(4) $5\frac{3}{4} \div$ ..... $= 1$

(5) $3\frac{1}{2} \div$ ..... $= \frac{5}{8}$

(6) ..... $\div 1\frac{5}{7} = 5$

(7) How many quarters are there in $2\frac{1}{4}$? .....

(8) How many thirds are there in $5\frac{2}{3}$? .....

(9) How many fifths are there in $7\frac{2}{5}$? .....

(10) How many sixths are there in $2\frac{5}{6}$? .....

(11) How many sevenths are there in $5\frac{2}{7}$? .....

(12) How many eighths are there in 5 ? .....

[6] Real life problems (story problems):

(1) Ayman has 30 feddans of agricultural land. He planted rice in $\frac{5}{6}$ of them. How many feddans were planted rice?

……

(2) The width of a rectangle is $\frac{2}{5}$ of its length. If the length equal to 20 cm. Find the width and its area.

……

……

(3) If the price of 14 pens is L.E. $10\frac{1}{2}$. Find the price of each pen.

……

……

(4) If the length of four pieces of cloth is $13\frac{1}{3}$ metres. Find the length of each piece.

……

SHEET (7)

Dividing decimals by 10, 100, 1000

[1] Complete:

1) 64.43 ÷ 10 =
2) 400.5 ÷ 100 =
3) 32.57 ÷ 100 =
4) 700.2 ÷ 10 =
5) 9.6 ÷ 10 =
6) 68.3 ÷ 100 =
7) 0.44 ÷ 100 =
8) 49.21 ÷ 1000 =
9) 48.2 ÷ 10000 =
10) 3.75 ÷ 100 =
11) 1.7 ÷ 10 =
12) 5743.4 ÷ 1000 =

[2] Put (<), (>) or (=):

1) 136.76 ÷ 100 ☐ 1367.4 ÷ 1000
2) 608.3 ÷ 100 ☐ 508.7 ÷ 10
3) 4.532 ÷ 10 ☐ 45.32 ÷ 100
4) 3721 ÷ 1000 ☐ 0.3721× 100
5) 987.6× 100 ☐ 98.76 ÷ 10

[3] Complete:

1) 37.9 ÷ ..... = 3.79
2) 17.55 ÷ ..... = 0.1755
3) 9876.2 ÷ ..... = 9.8762
4) ..... ÷ 10 = 17.35
5) ..... ÷ 100 = 4.599
6) ..... ÷ 1000 = 5.59

[4] Complete:

1) 743 mm = ... cm

2) 3237 gm = ... Kg

3) 0.7 gm = ... Kg

4) 80 cm = ... m

5) P.T. 561.5 = L.E. .....

6) 734 ml = ... litre

[5] Real life problems (story problems):

(1) Soha bought 10 kg of fruits for L.E. 47.5 calculate the price of one kilogram.

.....

(2) A bicycle covered 45.8 m in ten seconds. How many metres did it cover in one second?

.....

(3) The ministry of education bought 1000 computers for L.E. 2349650 calculate the price of each computer.

.....

SHEET (8)

Dividing a whole number by a 3-digit number

[1] Find the quotient of each of the following:

1) 5289 ÷ 123 =
2) 62160 ÷ 296 =
3) 6188 ÷ 221 =
4) 15345 ÷ 165 =
5) 3978 ÷ 234 =
6) 37961 ÷ 493 =

[2] Choose the correct answer:

1) 4428 ÷ 123 = (36 , 35 , 34 , 32)
2) 15500 ÷ 125 = (1240 , 124 , 125 , 120)
3) 11664 ÷ 216 = (54 , 58 , 62 , 68)
4) 19708 ÷ 379 = (48 , 52 , 54 , 62)

[3] Real life problems (story problems):

(1) Find the number which when multiplied by 117, the result will be 2925.

(2) The product of multiplying 2 numbers is 9088, if one of them is 284 find the other number.

(3) A factory produces 235 pieces of cloth monthly, in how many months does it produce 26555 pieces of cloth?

(4) An owner of packing food factory wanted to pack 5904 kg of sugar equally in 492 packs. What is the weight of each pack?

(5) If the year is 365 days. How many years are there in 53655 days?

SHEET (9)

Dividing by a decimal

[1] Find the quotient of each of the following:

1) 0.8 ÷ 0.2 =
2) 4.2 ÷ 0.06 =
3) 2.67 ÷ 1.2 =
4) 36.18 ÷ 0.09 =
5) 48.48 ÷ 4.8 =
6) 4.384 ÷ 0.32 =
7) 357 ÷ 0.7 =
8) 1.155 ÷ 0.35 =
9) 3.375 ÷ 13.5 =
10) 21.528 ÷ 93.6 =

[2] Choose the correct answer:

1) 48.24 ÷ 1.2 = (4.2 , 40.2 , 14.0 , 142)
2) 87.5 ÷ 8.75 = (1 , 10 , 0.1 , 100)
3) 4.8 ÷ 0.16 = (3 , 30 , 300 , 0.3)

[3] Real life problems (story problems):

(1) A train covered 221.65 km in 2.75 hours. Calculate the distance it covers in one hour.

(2) If L.E. 362.5 is distributed among the excellent pupils and each of them takes L.E. 14.5 Find the number of excellent pupils.

SHEET (10)

Infinite division

[1] Complete:

1) $\frac{7}{3} \cong$ ..... to the nearest $\frac{1}{10}$

2) $\frac{5}{9} \cong$ ..... to the nearest $\frac{1}{100}$

3) $\frac{3}{11} \cong$ ..... to the nearest $\frac{1}{1000}$

[2] Carry out each of the following:

1) **8.5 ÷ 2.7 =** **(App. to the nearest tenth)**

2) **1300.29 ÷ 52.8 =** **(App. to the nearest hundredth)**

[3] Complete:

1) 39 days ≅ ..... weeks

2) 254 hr. ≅ ..... days

3) 67 months ≅ ..... years

[4] The area of a rectangle is 9.43 cm^2, and its width is 2.45 cm. Find its length and approximate it to the nearest hundredth of centimeters.

SHEET (12)

Unit (2): Sets

The set: is a collection of known objects that are clearly defined.

[A] State which of the following is a set or not a set:

1) The colours of the Egyptian flag. .....

2) Beautiful cities in Egypt. .....

3) The fingers of your left hand. .....

4) Digits of the number 1982. .....

5) The letters of the word "Egypt". .....

6) Prime numbers between 5 and 25. .....

7) Intelligent pupils in the class. .....

[B] Express each of the following sets by listing method:

(1) A = the set of digits of the number 335011.....

(2) B = the set of letters of the word "address".....

(3) C = the set of numbers on a dice. .....

(4) D = the set of counting numbers.....

(5) E = the set of even numbers. .....

(6) F = the set of even numbers greater than 6. .....

(7) G = the set of even numbers smaller than 6. .....

(8) H = the set of even numbers between 4 and 11. .....

(9) I = the set of odd numbers. .....

(10) J = the set of odd numbers which greater than 2 and less than 10. .....

(11) K = the set of prime numbers. .....

(12) L = the set of prime numbers between 4 and 15. .....

(13) M = the set of numbers divisible by 2. .....

(14) N = the set of numbers divisible by 3. .....

(15) O = the set of numbers divisible by 5. .....

(16) P = the set of counting numbers less than 0. .....



SHEET (13)

Belonging of an element to a set

[A] Put in front of each set one of the two words (null) or (not null):

1) The set of Arabic countries in Australia. .....

2) The set of Egyptian governorates in Asia. .....

3) The set of students in your class who made a trip to the moon.

4) The set of triangles having 4 sides. .....

5) The set of months of the Christian year of days which are more than 30 days. .....

[B] Complete using (∈) or (∉):

(1) 3 ..... { 3 , 5 }

(2) 2 ..... {3 , 1 , 7 }

(3) 5 ..... {15 , 35 }

(4) Δ ..... { O , □ , Δ }

(5) 6 ..... { 66 }

(6) Y ..... the set of letters of the word "Egypt".

(7) 20 ..... the set of digits of the number 2020.

(8) 3 ..... the set of odd numbers.

(9) 7 ..... the set of days of the week.

[C] Complete:

(1) If $4 \in \{ 2 , x , 5 \}$ then x = ...

(2) If $5 \in \{ 7 , 9 , x \}$ then x = ...

(3) If $5 \in \{ 3 , x + 4 \}$ then x = ...

[D]:

If $A = \{1 , 3 , 5 , 7 , 9\}$ and $B = \{0 , 2 , 4 , 6 , 8\}$, put the suitable symbol $\in$ or $\notin$:

(a) 1 ☐ A

(b) 8 ☐ B

(c) 9 ☐ B

(d) 13 ☐ A

(e) 7 ☐ B

(f) 10 ☐ B

If X is a set where $X = \{2 , 3 , 5 , 6\}$

Place the suitable symbol $\in$ or $\notin$ in the blanks to make each sentence true :

(a) 3 ☐ X

(b) 5 ☐ X

(c) 7 ☐ X

(d) 6 ☐ X

(e) 0 ☐ X

(f) 2 ☐ X

(g) 1 ☐ X

(h) 32 ☐ X

SHEET (14)
Equal sets, inclusion and subsets

[1] In each of the following, find the value of x:

1) { x } = { 3 } x = ……
2) { 1 , 4 } = { x , 1 } x = ……
3) { 3 , 6 , x } = { 6 , 3 , 2 } x = ……
4) { x + 2 } = { 9 } x = ……

[2] Complete using (⊂) or (⊄):

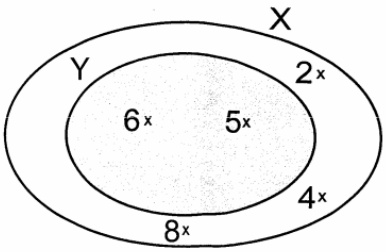
(1) { 1 } ……. { 1 , 3 }
(2) { 7 , 8 } ……. {3 , 1 , 7 }
(3) { 1 , 2 } ……. { 1 , 2 , 3 }
(4) { 7 } ……. { 17 , 77 }
(5) { 4 , 5 } ……. { 54 }
(6) ∅ ……. { 0 }
(7) ∅ ……. { 1 , 2 , 3 }
(8) { 5 , 2 } ……. ∅

[3] Put the suitable sign (⊄ , ⊂ , ∈ or ∉):

(1) { 2 , 3 } ……. { 1 , 2 , 3 }
(2) { 1 , 2 } ……. { 2 , 3 , 4 }
(3) b ……. { b , c }
(4) { a , b } ……. { b , a }
(5) 2 ……. { 22 , 44 }
(6) 0 ……. ∅
(7) 52 ……. the set of digits of the number 5252

[4]

Look at the opposite Venn diagram, then complete the following using one of the symbols "$\in$, $\notin$, $\subset$ or $\not\subset$" :



(a) Y X

(b) 2 X

(c) {5} ..... Y

(d) 6 ..... Y

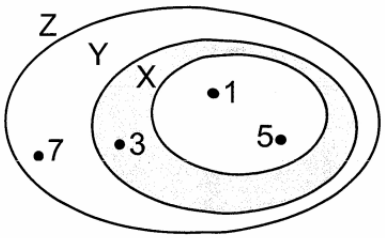
(e) 4 X

(f) {6, 8} X

[5]

In the opposite Venn diagram :

(a) List the elements of the three sets X , Y and Z :



(1) X = {..... , ...}

(2) Y = {..... , ... , ...}

(3) Z = {..... , ... , ... , ...}

(b) Put the suitable sign ($\subset$ or $\not\subset$) :

(1) X ..... Y

(2) X ..... Z

(3) Y X

(4) Y ..... Z

[6]

By using the opposite Venn diagram, complete by using the suitable sign "$\subset$, $\not\subset$, $\in$ or $\notin$" :

(a) 3 X

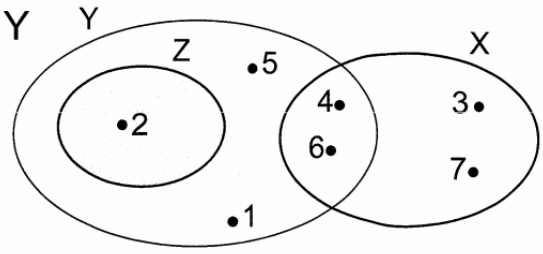
(b) {1, 4} ..... Y

(c) {1, 6} X

(d) 5 ..... Z

(e) Z ..... Y

(f) X ..... Y



SHEET (15)
Intersection of two sets

[1] Find each of the following:

1) { 5 , 6 } ∩ { 4 , 5 } = ……

2) { 2 , 3 , 4 } ∩ { 3 , 5 , 2 , 6 } = ……

3) { 5 , 3 } ∩ { 2 , 4 , 5 } = ……

4) { 2 } ∩ { 22 } = ……

5) { 3 , 6 } ∩ { 6 , 3 } = ……

6) { 3 , 6 } ∩ ∅ = ……

7) { 1 , 2 , 6 } ∩ { 1 , 26 } = ……

8) ∅ ∩ ∅ = ……

9) { 35 } ∩ { 53 } = ……

[2] Put the suitable sign (⊄ , ⊂ , ∈ or ∉):

(1) 3 ..... { 3 , 4 , 5 } ∩ { 2 , 3 , 4 }

(2) { 3 , 4 } ..... { 3 , 4 , 7 } ∩ { 5 , 4 , 3 }

(3) { 2 } ..... { 5 , 2 , 3 } ∩ { 1 , 2 , 5 }

(4) { 6 } ..... { 5 } ∩ { 6 }

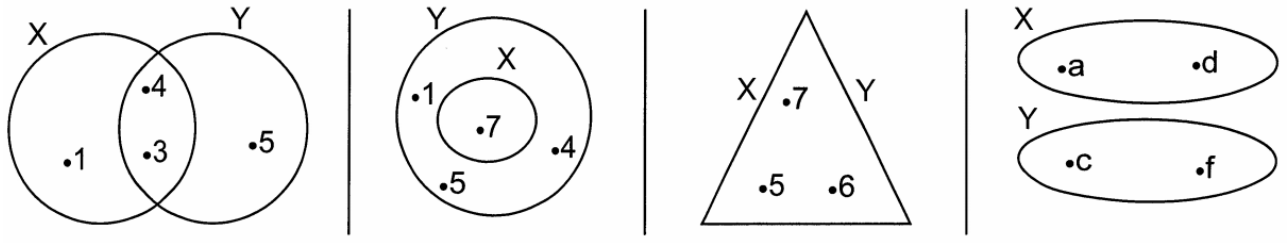
(5) 15 ..... { 5 } ∩ { 1 }

(6) { 13 } ..... { 13 } ∩ { 3 }

(7) 2 ..... { 2 , 3 } ∩ { 3 , 2 }

[3]

By using the following figures , find X ∩ Y :



[4] Complete:

(1) If a ∈ (X ∩ Y), then a ∈..... and a ∈.....

(2) If X ⊂ Y, then X ∩ Y = ...

(3) If X ∩ Y = Y, then ..... ⊂ .....

(4) If X ∩ Y = ∅, then X and Y are two ..... sets

(5) X ∩ ..... = Y ∩.....

(6) X ∩ ∅ = ...

(7) X ∩ X = ...

SHEET (16)
Union of two sets

[1] Find each of the following:

1) { 2 } ∪ { 4 } = ……

2) { 1 , 5 } ∪ { 1 , 3 } = ……

3) { 1 , 2 , 12 } ∪ { 2 , 3 , 12 } = ……

4) { a , b , c } ∪ { a , b , h } = ……

5) { 5 } ∪ { 1 , 5 , 7 } = ……

6) { 3 } ∪ { 33 } = ……

7) { 4 } ∪ { 4 } = ……

8) { 1 , 4 , 6 } ∪ ∅ = ……

9) { 0 } ∪ { 20 } = ……

[2] Complete:

(1) If a ∈ X or a ∈ Y, then a ∈ ……

(2) If a ∈ X and a ∈ Y, then a ∈ ……

(3) If X ⊂ Y, then X ∩ Y = …… and X ∪ Y = ……

(4) If X ∪ Y = Y, then …… ⊂ ……

(5) If X ∩ Y = Y, then …… ⊂ ……

(6) If X ∩ Y = ∅, then the two sets X and Y are ……

(7) If X ∪ Y = ∅, then the two sets X and Y are ……

(8) X ∩ …… = Y ∩…… and X ∪ …… = Y ∪……

(9) X ∩ ∅ = …… and X ∪ ∅ = ……

(10) X ∩ X = …… and X ∪ X = ……

(11) ∅ ∩ ∅ = …… and ∅ ∪ ∅ = ……

[3] Represent the two sets A and B by a Venn diagram, then find A ∩ B and A ∪ B:

(1) A = { 4 , 6 , 8 } B = { 3 , 5 , 7 }

A ∩ B = …… A ∪ B = ……

(2) A = { c , d , e , f } B = { d , e , l }

A ∩ B = …… A ∪ B = ……

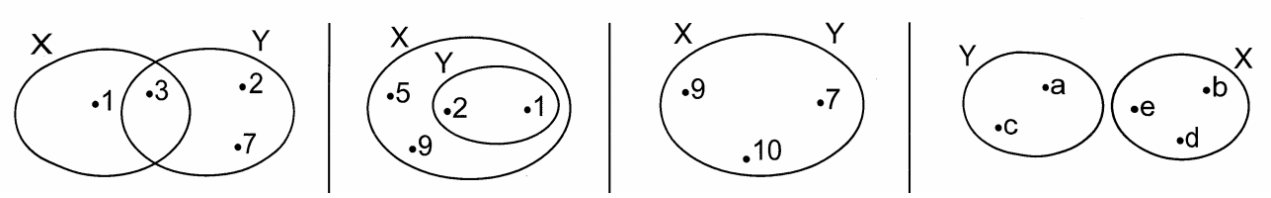
(3) A = { 1 , 2 , 3 , 4 } B = { 2 , 3 }

A ∩ B = …… A ∪ B = ……

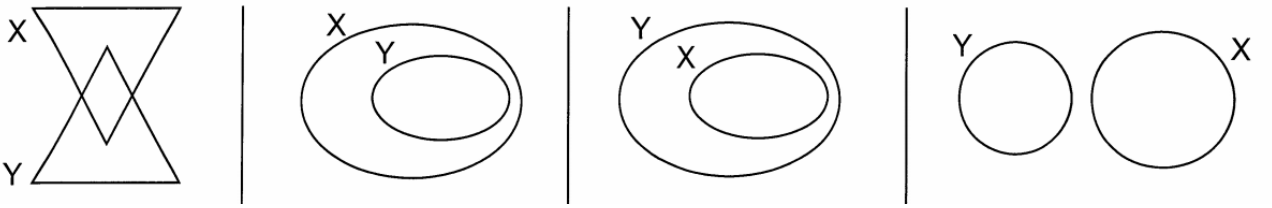
(4) A = { 4 , 5 } B = { 6 , 7 }

A ∩ B = …… A ∪ B = ……

Using the following figures, find X ∪ Y :



In each of the following , shade the part representing X ∪ Y :



SHEET (17)

Universal set and the Complement of a set

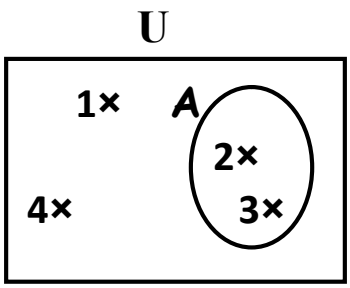
[A] Look at the opposite Venn diagram, then complete:

1) U = ……

2) A = ……

3) A' = ……

4) A ∩ A' = ……



[B] Look at the opposite Venn diagram, then complete:

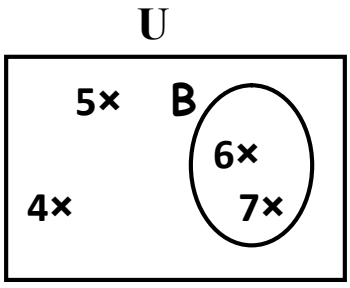
(1) U = ……

(2) B = ……

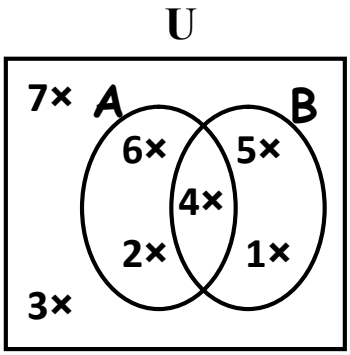
(3) B' = ……

(4) B ∪ B' = ……

(5) B ∩ B' = ……



[C] Look at the opposite Venn diagram, then complete:



(1) U = ……

(2) A = ……

(3) B = ……

(4) A ∪ B = ……

(5) A ∩ B = ……

(6) A' = ……

(7) B' = ……

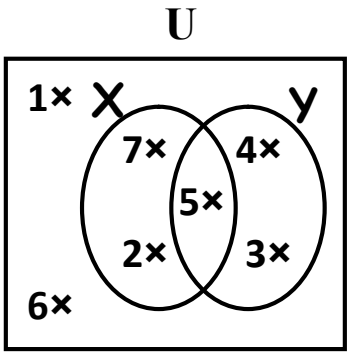
(8) (A ∪ B)' = ……

(9) (A ∩ B)' = ……

(10) A' ∪ B' = ……

(11) A' ∩ B' = ……

[D] Look at the opposite Venn diagram, then complete:



(1) X = ……

(2) Y = ……

(3) X ∪ Y = ……

(4) X ∩ Y = ……

(5) X' = ……

(6) Y' = ……

(7) (X ∪ Y)' = ……

(8) (X ∩ Y)' = ……

(9) X' ∪ Y' = ……

(10) X' ∩ Y' = ……

(11) U' = ……

(12) ∅' = ……

SHEET (18)

Difference between two sets

[A] Find:

1) { 1 , 2 , 4 } – { 2 , 4 , 6 } = ……

2) { a , b , c , d } – { a , b , c , o } = ……

3) { 3 , 4 } – { 4 } = ……

4) { 7 , 8 } – { 8 , 7 } = ……

5) { 2 , 5 } – { 3 , 4 } = ……

6) { 5 } – { 1 , 2 , 5 } = ……

7) ∅ – { 1 , 2 , 3 } = ……

8) { 5 , 6 } – ∅ = ……

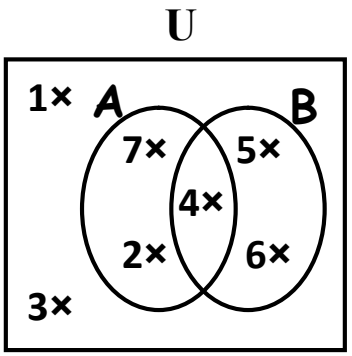
[B] Look at the opposite Venn diagram, then complete:

(1) $A \cap B$ = ……

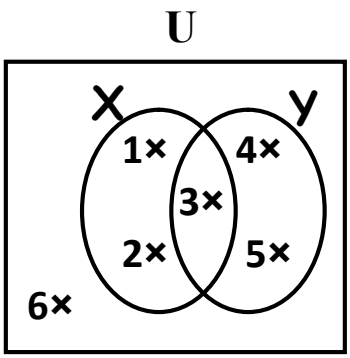
(2) $A \cup B$ = ……

(3) $A - B$ = ……

(4) $B - A$ = ……



[C] Look at the opposite Venn diagram, then complete:



(1) U = ……

(2) X = ……

(3) Y = ……

(4) X ∩ Y = ……

(5) X ∪ Y = ……

(6) X – Y = ……

(7) Y – X = ……

(8) X' = ……

(9) Y' = ……

(10) (X ∩ Y)' = ……

(11) (X ∪ Y)' = ……

(12) (X – Y)' = ……

(13) (Y – X)'= ……

[D]

If $U = \{ 1 , 2 , 3 , 4 , 5 , 6 , 7 , 8 \}$,

$X = \{ 1 , 2 , 3 , 4 \}$ and

$Y = \{3 , 4 , 5 , 8 \}$, then find:

(1) $X \cap Y$ = ……

(2) $X \cup Y$ = ……

(3) X' = ……

(4) Y' = ……

(5) $X - Y$ = ……

(6) $Y - X$ = ……

(7) $X' \cap Y'$ = ……

(8) $X' \cup Y'$ = ……

(9) $X' - Y'$ = ……

(10) $Y' - X'$= ……

[E] Look at the opposite Venn diagram, then complete:

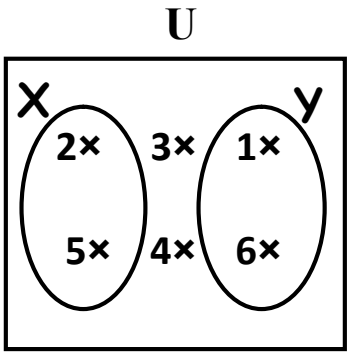
(1) X ∩ Y = ……

(2) X ∪ Y = ……

(3) U – X = ……

(4) U – Y = ……

(5) (X ∪ Y)' = ……



[F] Look at the opposite Venn diagram, then complete:

(1) U = ……

(2) X = ……

(3) Y = ……

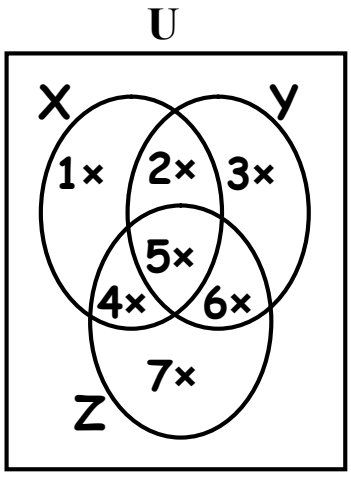
(4) Z = ……

(5) X ∩ Y = ……

(6) X ∪ Y = ……

(7) Z ∩ Y = ……

(8) Y – X = ……



SHEET (19)
The circle

[1] Complete:

(a) 🕮 ..... is used in drawing the circle

(b) The lengths of all radii in the same circle are .....

(c) All the diameters of a circle are ..... in length.

(d) 🕮 The chord of a circle is a line segment that connects .....

(e) The diameter is a chord that crosses .....

(f) 🕮 The longest chord in a circle is called .....

(g) 🕮 The midpoint of any diameter in a circle is ..... of the circle.

(h) The diameter length = 2 × the length .....

(i) If the radius length of a circle is 5 cm. , then the length of the longest chord is ..... cm.

(j) 🕮 To draw a circle whose diameter length is 7.2 cm. , set the compasses to a length equal to ..... cm.

[2] Choose the correct answer:

(a) Any chord passing through the centre of the circle is called .....
(radius ***or*** diameter ***or*** centre)

(b) Any line segment connects between any two points on the circle is called .....
(diameter ***or*** radius ***or*** chord)

(c) The length of the radius = ... the length of the diameter in the same circle.
(double ***or*** half ***or*** triple)

(d) The length of the radius of a circle is 8 cm., then the length of the greatest chord in it = ... cm.
(4 ***or*** 16 ***or*** 12)

Draw the circle M with radius length 5 cm, draw, the diameter $\overline{AB}$ and the chord $\overline{BC}$ where BC = 8 cm and join $\overline{AC}$, then find:

(a) The length of the chord $\overline{AC}$.

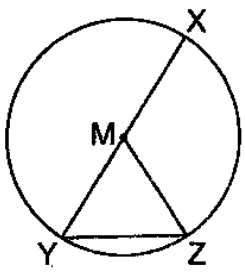
(b) The $m(\angle C)$.

📖 Draw a circle whose centre is M and radius is 2.5 cm.
Then draw its diameter $\overline{AB}$ and draw its chord $\overline{AC}$ of length 3 cm.
Draw $\overline{BC}$, then find its length.

In the opposite figure :

[a] The diameter is .....

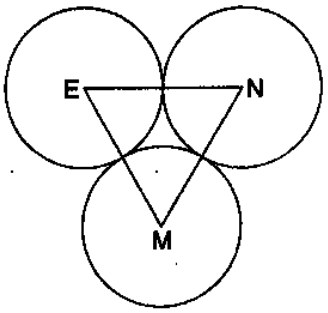
[b] $\overline{YZ}$ is called .....



In the opposite figure :

Three circles of centres M , N and E of radius length 3 cm. for each.

Find the perimeter of Δ MEN



SHEET (19)

Drawing a triangle

[1] Draw the equilateral triangle ABC whose side length is 5 cm, then draw $\overline{AD} \perp \overline{BC}$, then find the perimeter of Δ ABC.

[2] Draw the triangle ABC in which AB = AC = 5 cm and CB = 8 cm, then draw $\overline{AD} \perp \overline{BC}$ to cut it at D, then find:

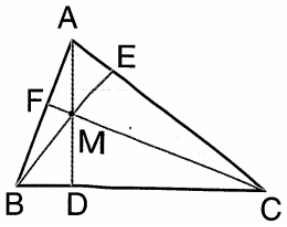
(a) The length of $\overline{AD}$. **(b) The perimeter of Δ ABC.**

[3] Draw the triangle ABC in which AB = 4 cm, AC = 5 cm and CB = 3 cm. What is the type of Δ ABC according to the measure of its angles? And find its perimeter.

[4] Draw the triangle ABC in which AB = 3 cm, AC = 5 cm and CB = 4 cm. Draw $\overline{BD} \perp \overline{AC}$ to cut it at D, then find the length of $\overline{BD}$ and $m(\angle B)$.

First The altitudes of an acute-angled triangle

The three altitudes $\overline{AD}$, $\overline{BE}$ and $\overline{CF}$ intersect at one point (M) located inside the triangle.



Second The altitudes of the obtuse-angled triangle

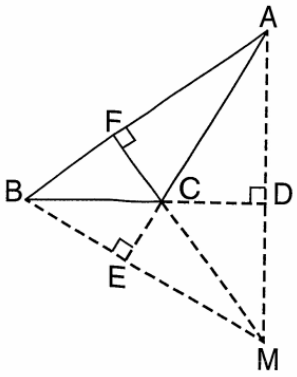
the three altitudes of the triangle ABC are :

$\overline{AD}$, its corresponding base is $\overline{BC}$ (where $\overline{AD} \perp \overrightarrow{BC}$)

$\overline{BE}$, its corresponding base is $\overline{AC}$ (where $\overline{BE} \perp \overrightarrow{AC}$)

$\overline{CF}$, its corresponding base is $\overline{AB}$ (where $\overline{CF} \perp \overline{AB}$)

The three rays $\overrightarrow{AD}$, $\overrightarrow{BE}$ and $\overrightarrow{FC}$ intersect at one point (M) located outside the triangle.



Third The altitudes of the right-angled triangle

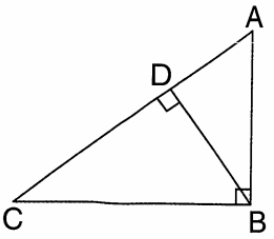
the three altitudes of the triangle ABC are :

$\overline{AB}$, its corresponding base is $\overline{BC}$

$\overline{CB}$, its corresponding base is $\overline{AB}$

$\overline{BD}$, its corresponding base is $\overline{AC}$

The three altitudes $\overline{AB}$, $\overline{CB}$ and $\overline{BD}$ intersect at the point B which is the vertex of the right angle.



SHEET (20)
Probability

[A] Choose the correct answer:

(a) Tossing a regular coin, the probability of landing a head = ……
$(\frac{1}{3}, \frac{1}{2}, \frac{3}{4}, 1)$

(b) The probability of an impossible event = …… $(\phi, 1, 0, 2)$

(c) The probability of the certain event = …… $(0, 1, 100, \phi)$

(d) The probability that the elephant flies is …… $(0, 1, 10, \phi)$

(e) It is …… that the sun rises from east.
(possible, impossible, sure)

[B] If we roll a regular number cube (die), complete the following:

(1) The probability of getting an even number = ……

(2) The probability of getting an odd number = ……

(3) The probability of getting a prime number = ……

(4) The probability of getting the number 5 = ……

(5) The probability of getting a number less than 3 = ……

(6) The probability of getting a number more than 2 = ……

(7) The probability of getting the number 7 = ……

(8) The probability of getting a number less than 7 = ……

(9) The probability of getting a number divisible by 3 = ……

[C] A bag contains 5 white balls, 9 red balls and 6 black balls. One ball is taken out at random. Calculate the probability that the ball is:

(1) Red = ……

(2) Green = ……

(3) Black = ……

(4) White or black = ……

(5) Blue = ……

The following table shows the evaluation of 50 students in one month :

Estimate	Excellent	Very good	Good	Pass	Fail
Number	6	9	11	16	8

(a) A student is randomly selected. What is the probability of getting a score of excellent ?

(b) If the number of students in the school is 1 000 students , how many students are predicted to get a score of very good ?

Choose the correct answer from those given :

(a) 🕮 Tossing a regular coin , the probability of landing a head = ...

($\frac{1}{3}$ *or* $\frac{1}{2}$ *or* $\frac{3}{4}$ *or* 1)

(b) 🕮 The probability of an impossible event = ...

(∅ *or* 1 *or* 0 *or* 2)

(c) The probability of the certain event = ...

(0 *or* 1 *or* 100 *or* ∅)

(d) The probability that the elephant flies is .....

(0 *or* 1 *or* 10 *or* ∅)

(e) It is ..... that the sun rises from east.

(possible *or* impossible *or* expected *or* sure)

(f) A basket contains cards numbered from 1 to 20. If a card is drawn at random , what is the probability that the number written on the card is divisible by 6 ?

($\frac{3}{20}$ *or* $\frac{4}{20}$ *or* $\frac{5}{20}$ *or* $\frac{6}{20}$)

(g) A bag has 5 red balls and 3 white balls. If the balls are similar and a person draws a ball randomly , then the probability that the drawn ball is white = ...

($\frac{3}{5}$ *or* $\frac{3}{8}$ *or* $\frac{5}{8}$ *or* $\frac{5}{3}$)

Unit 1: Numbers and Operations

Approximating to the nearest hundredth and thousandth

(1) Approximate each of the following to the nearest hundredth:

(a) 12.455 ≃ ……

(b) 857. 296 ≃ ……

(c) 10.995 ≃……

(d) 3 $\frac{17}{500}$ = ……≃ ……

****

(2) Approximate each of the following to the nearest thousandth:

(a) 0.383 ≃ ……

(b) 52.3723 ≃ ……

(c) 537.2983 ≃……

(d) 8 $\frac{1}{8}$ = …… ≃……

****

(3) Find the result of each of the following (write steps)

(a) 65.384 + 63.427 = …… ≃…… (thousandth)

(b) 17.521 + 12 $\frac{1}{8}$ = ……≃…… (hundredth)

(c) 3 $\frac{3}{8}$ - 1 $\frac{3}{4}$ = …… ≃ …… (2-decimal places)

(d) 9 – 3.5116 = ……≃ …… (0.001)

(e) 57 days ≃ …… weeks

****

(4) write down the smallest and the greatest decimal fraction that includes the digits (2 , 5 , 7 , 1) , then approximate that number to the nearest hundredth and nearest thousandth.

Smallest = ... ≃…… greatest = ... ≃……

Comparing and ordering fractions

(1) put the suitable sign (> , < , =)

(a) $\frac{5}{8}$ ***……*** $\frac{3}{8}$ ***(b)*** $\frac{3}{8}$ ***…… 1*** ***(c)*** $\frac{8}{5}$ ***……*** $\frac{8}{3}$

(d) $\frac{3}{5}$ ***……*** $\frac{6}{10}$ ***(e)*** $\frac{3}{4}$ ***……*** $\frac{7}{5}$ ***(f)*** $4\frac{2}{7}$ ***……*** $4\frac{1}{3}$

(g) 3.05 …… $3\frac{1}{2}$ ***(h)*** $1\frac{7}{8}$ ***…… 1.125*** ***(i) 3 ……*** $2\frac{3}{3}$

****

(2) Arrange each of the following in ascending order :-

(a) $\frac{1}{2}$ ***,*** $\frac{3}{4}$ ***,*** $\frac{2}{3}$

The order is :- …… , …… , ……

(b) 5.7 , 5 $\frac{3}{4}$ ***, 6.2***

The order is :- …… , …… , ……

****

(3) Arrange descendingly :-

(a) 3 $\frac{1}{4}$ ***, 3*** $\frac{1}{2}$ ***, 2*** $\frac{5}{11}$ ***, 3*** $\frac{3}{8}$

The order is :- …… , …… , …… , ……

****

(4) Write the possible values of x in each of the following, where x is an integer:

a) $\frac{4}{9} < \frac{x}{9} < \frac{8}{9}$ ***b)*** $\frac{5}{7} < \frac{5}{x} < 1$

Multiplying decimals by 10 , 100 and 1000

(1) Multiply

(a) 0.25 × 10 = …… ***(b) 3.18 × 10 = ……*** ***(c) 3.2 × 10 = …….***

(d) 0.325 × 100 = ……. ***(e) 12.587 × 100 = ……*** ***(f) 9.7 × 100 = ……***

(g) 147.9 × 100 = …… ***(h)*** $9\frac{1}{5}$ ***× 10 = ……*** ***(i)*** $52\frac{7}{8}$ ***× 100 = ……***

(j) 0.7215 × 1000 = ……. ***(k) 7.32 × 1000 = ……***

(l) ……. × 100 = 58.69 ***(m) (2.14 × 10) + (8.35 × 10) = ……***

****

(2) Complete:

a) 5.002 Kg = ……. grams.

b) L.E 545.8 = ……. piasters.

c) 5.6 km = …….. m.

****

Multiplying decimals

(1) Put the decimal point in the underlined number :

(a) 0.9 X 0.3 = 27

(b) 0.2 X 4 = 0.08

(c) 17 X 6 = 1.02

(d) 100 X 0.175 = 175

****

(2) Find the product to the nearest (with steps) :-

(a) 325 × 0.23 = ……. ≃ ……. (tenth)

(b) 50.2 × 2.8 = ……. ≃ ……. (1- decimal place)

(c) 0.91 × 0.7 = ……. ≃ ……. (whole number)

(d) 7. 05 × 0.05 = ……. ≃ ……. (0.001)

(e) 1.2 × 0.009 = ……. ≃ ……. (hundredth)

****

(3) Ahmed bought 10 pens , the price of each is 0.8 pounds , and two books for each 8.5 pounds . If he had 30 pounds . How many pounds were left with him ?

……

……

……

Multiplying and dividing fractions

(1) Find the product of the following :-

(a) $\frac{1}{2}$ ***of*** $\frac{1}{3}$ ***= ……***

(b) $\frac{4}{5} \times \frac{2}{3}$ ***= ……***

(c) ***8*** $\times \frac{3}{4}$ ***= ……***

(d) $\frac{7}{10} \times \frac{5}{14}$ ***= ……***

(e) $\frac{5}{6} \times \frac{12}{15}$ ***= ……***

(f) ***10*** $\times \frac{1}{2}$ ***= ……***

(g) $3\frac{1}{2} \times \frac{2}{7}$ ***= ……***

(h) $\frac{5}{6}$ ***× 4*** $\frac{1}{2}$ ***= ……***

(i) $7\frac{1}{2} \times 2\frac{2}{5}$ ***= ……***

****

(2) Write the reciprocal of each of the following

(a) $\frac{2}{5}$ ***= ……***

(b) $\frac{7}{10}$ ***= ……***

(c) ***6 = ……***

(d) $\frac{1}{8}$ ***= ……***

(e) $3\frac{1}{2}$ ***= ……***

(g) $4\frac{3}{4}$ ***= ……***

(h) $8\frac{1}{6}$ ***= ……***

(i) 7.25= ……

(3) Divide the following (put the result in the simplest form) :-

(a) $\frac{3}{4} \div \frac{9}{10}$ **= ……. ×…….= ……**

(b) $\frac{9}{10} \div \frac{7}{10}$ **= …….×……= …….**

(c) $\frac{3}{10} \div \frac{2}{5}$ **= ……**

(d) $3\frac{1}{2} \div \frac{7}{4}$ **= ……**

(e) $9\frac{1}{5} \div \frac{23}{25}$ **= ……**

(f) $5\frac{1}{4} \div \frac{1}{16}$ **= ……**

(g) $2\frac{1}{7} \div 1\frac{1}{14}$ **= ……**

(h) $6\frac{1}{2} \div 3\frac{1}{4}$ **= ……**

(i) $\frac{1}{4} \div 3$ **= ……**

(j) $3\frac{1}{3} \div 8$ **= ……**

Dividing decimals by 10 , 100 and 1000

(3) Divide

(a) 96.7 ÷ 10 = ……. ***(b) 0.251 ÷ 10 = …….***

(c) 753.4 ÷ 100 = ……. ***(d) 4.03 ÷ 100 = …….***

(e) 7253.4 ÷ 1000 = ……. ***(f) 54.071 ÷ 1000 = …….***

****

(4) Complete

(a) 4.85 × 1000 = 48.5 × ……

(a) $3\frac{7}{20}$ ***meters = …….. centimeters***

(b) $4\frac{1}{2}$ ***cm = ……. m***

(c) $9\ \frac{1}{4}$ ***litres = ……. ml***

****

Dividing by a 3-digit number

(1) Find the quotient of each of the following (with steps)

(1) $29\overline{)13282}$ .....

(2) $6188 \div 221$

(3) $54060 \div 265$

(4) $125\overline{)25625}$ .....

****

(2) Ahmed bought a car for 28170 pounds .He paid 8450 pounds in Cash and paid the rest in 136 equal installments. Find the value of each installment.

.....

.....

.....

****

(5) A tourist group of 1495 tourists reached Alex Airport to visit Luxor and Aswan. They all got into a train from Alex station. If each train carriage holds 115 passengers, Find the number of carriages they got into.

.....

.....

.....

Dividing by a decimal fraction and a decimal number.

(1) Find the quotient in each of the following:

a) 0.416 ÷ 0.8

b) 0.0874 ÷ 0.46

c) 357 ÷ 0.7

d) 0.7595 ÷ 0.31

****

(2) A bundle of paper has a height of 4.5 cm. If all its sheets were of equal thickness where the thickness of each paper was 0.090 millimeters, Find how many sheets does the bundle include?

……

……

Infinite division

(1) Find the quotient of each of the following

(a) 3 ÷ 4 ***(b) 1 ÷ 8***

****

(2) Find the quotient of (With steps) :-

(a) 45672 ÷ 673 approximating to the nearest one decimal place.

b) 2 ÷ 3 approximating to the nearest two decimal place.

c) 4 ÷ 13 approximating to the nearest two decimal place.

****

(2) I am a number if you divide me by 631 the quotient will be 30 who am I ?

……

……

****

Unit Test

1- Complete:

a) $\frac{7}{80} \simeq$ ……to the nearest hundredth

b) $9\frac{3}{25} \simeq$ …… to the nearest tenth

c) $39\frac{2}{5} - 7.25 =$……$\simeq$…… to the nearest unit

d) 46.6 dm = …… cm

e) 3.75 × 1000 = …… , 73.475 ÷ 100 =……

f) …… × 100 = 42.5 , …… ÷ 10 = 324

2- Choose the correct answer

a) The quotient of dividing 5.45 ÷ 0.5 = ……. (1.9 , 1.09 , 10.9 , 109)

b) 327 ÷ 24 = 3.27 ÷ ……. (2.4 , 0.24 , 24 , 2004)

c) $\frac{1}{25}$× 50 × 0.25 = ……. (4 , $\frac{1}{4}$, $\frac{1}{2}$, 2)

d) 43 days $\simeq$ ……. to the nearest week (4 , 6 , 5 , 7)

3- Find the result

a) $12\frac{1}{2} \div 6\frac{1}{4}$ = ……

b) 2.4 × 4.7 = ……

c) $\frac{3}{8} \times \frac{2}{9}$ = ……

d) (10.555 – 8.245) ÷ 2.8 = ……

e) 9375 ÷ 15 = ……

f) $\frac{17}{40}$÷ 0.85 = ……

g) If a = 18.24 , b = 8.354 find the result of a + b to the nearest hundredth

4) Mahmoud bought a computer for 2000 pounds . he paid 250 pounds cash money and divided the remainder into 50 equal monthly installments. Calculate the value of each installment.

---

5) The length of a piece of cloth is 9.25 m , 12 towels are made of it . the length of each towel is 0.75 m . How many meters are the remainder?

<u>6) Arrange in an ascending order.</u>

$\frac{1}{4}$, 0.8 , 0.4 , $\frac{1}{2}$, $\frac{3}{4}$

The order : ……. , ……. , ……. , ……. , …….

<u>7) Arrange in a descending order.</u>

3.4 , 0.0333 , 0.3033 , 3.333 , 0.3303

The order : ……. , ……. , ……. , ……. , …….

Unit 2: Sets

What is a Set ?

(1) Complete:

The set is ……

……

(2) State which of the following is a set and which is not a set , mention the elements of these sets:-

a) Egyptian flag colors.

b) Months of the year.

c) Beautiful flowers.

d) Tall students in your class.

Mathematical expressions of a set

1) The two ways of representing a set are ……method and …… method.

2) List each of the following Sets :

a) The set of days of the week

……

……

b) The set of whole numbers which are less that 5

……

……

c) The set of whole numbers between 5 and 6

……

……

3) Represent each of the following sets by Venn diagram:

a) X= { 2 , 3 , 4 }

b) The set of the letters of the word Ali

Belonging of an element to a set

(1) Put the suitable symbol (∈ , ∉) ***:-***

a) 1 ……..{1 , 5 , 12 }

b) 15 …….. {1 , 5, 12 }

c) 3 …… { 2 , 20 , 33 , 44 }

d) 7 ……. The set of days of the week.

e) 5 …….. The set of odd numbers.

Types of sets

1) Write the suitable word (Finite set , infinite set , empty set) :-

a) { 1 , 2 , 3 , 4 , ……} ……..

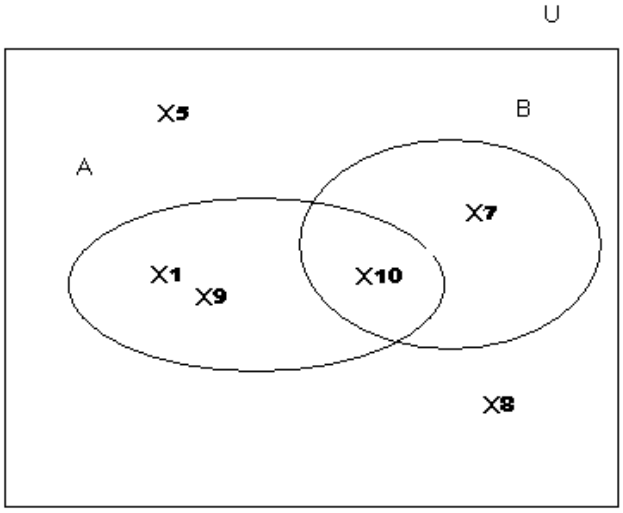
b) The set of cats with 10 legs ……..

c) The set of prime even numbers ……

d) The set of whole numbers between 1 and 2 ……

Operations on sets

1) Complete using the opposite venn diagram :-



a) U = …….

b) A = …….

c) B = …….

d) A ∩ B =…….

e) A ∪ B = ……..

f) $A^{\setminus}$ = ……

g) $B^{\setminus}$ = ……..

h) $U^{\setminus}$ = ……

i) A – B = ……

j) B – A = ……

k) $\Phi^{\setminus}$ = ……

2) Represent the sets X , Y , U by venn diagram , then complete :-

a) X={ 1 , 2 , 4 , 7 , 0 , 11 }

b) Y ={ 1, 2 , 8 ,9 ,19 , 22}

c) U ={ 1,2,3,4,7,0,11,8,9,19,22,76}

d) X ∩ Y

e) Y ∪X

f) $X^{\setminus}$

g) $Y^{\setminus}$

h) X – Y

Unit Test

1) Complete by using the suitable symbol (∈,∉,⊂,⊄):

a) 8 …….{ 7 , 5 , 8 , 88 }
b) {8} …….{7 , 5 , 8 , 88}
c) ∅ …….{ 2 , 4 }
d) { 4 , 8 }…….{ 4 , 5 , 6 , 8}
e) 7 ……..{3 , 5 , 9}
f) {9}…….. {99}
g) {1} ……. {1 , 11 , 111}
h) {1 , 2} …… {21 , 12}

2) Complete :

a) {3 , 4}∩{2 , 4}=……..
b) {3 , 4}∩{43}=……..
c) {2 , 3 , 4}∩{3 , 5 , 2}=…….
d) {3 , 5} ∪{4, 6}=…….
e) {2 , 4 , 7}∪{1 , 4 , 7}=…….
f) {a , b , c}∪{b , c , a}=…….

3) If X and Y are two non-empty sets then :

a) X ∩ ∅ = ……..
b) X ∩ X = …….
c) if X ⊂ Y then X ∩ Y = ……
d) if X ∩ Y =Y then ……⊂ ……

4) Complete by putting the suitable symbol (∈,∉,⊂,⊄):

If Y = {2 , 4 , 6} ∪ {1 , 2 , 3} then :
a) {6}…….. Y
b) {1 , 2 , 3 , 4 , 6} …….. Y
c) 6 …….. Y

5) If A ={5 , 6 , 7} - {2 , 4} then :

a) 4 ……. A
b) {6 , 5} …….. A
c) {7}…….. A
d) 7…….. A
e) {2}…….. A

6) Complete:

a) If X={2 , 4 , 5}∩{3 , 5 , 7} then 1 …… X

b) {1 , 8}…….{0 , 1 ,2,3,4,5 ,…….}

c) If X⊂Y then X-Y =……

d) If X …. Y then X ∩ Y =X

e) If X and Y ……. U then X ∪ Y = Y ∪ X

f) {3} …… {3 , 6}

g) 3 …….. {30 , 33}

h) 12 ……. {0 , 2 , 4 , 6 ,…….}

i)) Zero ……. { }

j) 3 …….. the set of factors of the number 18

k) If {3, 6} = {1+x , 3} then x = …….

l) If X⊂ Y then X- Y = …….

7) Represent the two sets A and B by Venn diagram in each of the following cases then find A∩B , A∪B , A-B and B-A :

a) A= {1 , 2 , 3 , 6} , B ={2 , 3}

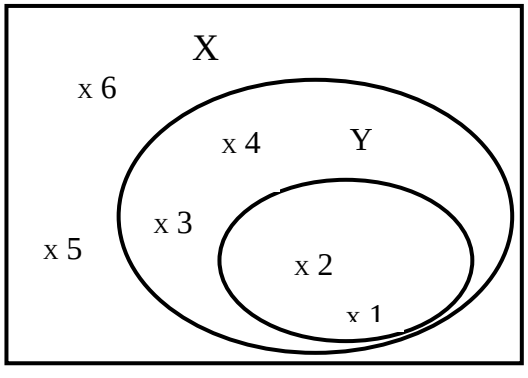
b) A = {4 , 7 , 6 , 5 , 1} , B = {2 , 3 , 4 , 5 , 6}

c) A= {a , m , x} , B ={a , f , x , m}

8) Use the opposite Venn diagram to write the following sets :

a) X – Y b) X ∩ Y

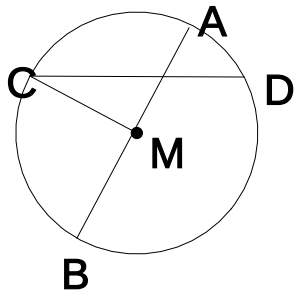
c) X ∪ Y d) $(X - Y)^{\lambda}$



Unit 3: Geometry

The circle

(1) In the opposite figure



(a) The point M is called .....

(b) $\overline{AB}$ is called a ..... in the circle.

(c) $\overline{CD}$ is called a ..... in the circle.

(d) AM = ... =..... = ...

---

(2) Draw circle M with radius MA=4 cm, find the length of the greatest chord .

(3) Draw circle N with diameter AB= 9cm, then draw the chord AC=5 cm. join $\overline{BC}$, then find

(a) m ($\angle$ ACB)

(b)The type of the triangle ABC.

Constructing a triangle

1) Draw a triangle ABC , AB = 5 cm , BC = 6 cm , m(< B) = 50 ° , then find the type of triangle according to its sides , then draw the altitude from A to $\overline{BC}$.

2) Draw a triangle XYZ , in which XY = 6 cm , m(<X) = 120° , m(<y)=30° , Find the type of the triangle according to its angles, then draw the altitude from X to $\overline{YZ}$.

3) Draw the triangle ABC in which AB = 5 cm , BC = 4 cm , CA = 3cm, then find the type of the triangle according to its angles , then draw the altitude from B to $\overline{AC}$.

4) Draw the triangle LMN in which LM = 6 cm , MN = 6 cm , NL = 6 cm , then find the type of the triangle according to its angles, then draw the altitude from L to $\overline{MN}$.

Unit Test

1-Complete:

a) Any chord which passes through the centre of the circle is called ……

b) If a circle's diameter's length is 8 cm . then its radius length = ……..cm

c) The chord of the circle which passes through its centre is ……..

d) If the length of sides of the triangle are 6 , 6 , 6 length unit , then it is calle

…… triangle and the measure of each of its angle =…….

e) The number of altitudes of the obtuse triangle is ……

f) The altitudes of the right angle triangle intersect at ……..

g) The chord which passes through the centre of the circle is called ……..

h) Any line segment which joins two points on the circle is called ……..

i) It's possible to draw a triangle if the length of ……..are known

j) The diameter of the circle of radius 1 cm = ……. Cm

k) The triangle which the length of its sides is equal is called ……

l) The number of altitudes of any triangle is ……

2- Story problems

a) Draw the triangle ABC in which AB = 6cm, BC = 8 cm, AC = 10 cm

then draw the circle M whose diameter is AC . Then find:

- The perimeter of the triangle ABC
- Use the protractor to find the measure of < ABC
- The length of AM , BM , CM
- The type of the triangle MBC due its angles
- Mention two isosceles triangles

b) Draw the isosceles triangle ABC which is a right angled triangle at B where AB = 5 cm. from B draw the line segment which is perpendicular to AC (say BD) and measure its length .

Unit 4: Probability

Lesson 1 : Investigating experiment and outcomes.

Probability means the chance or likelihood that something will happen.

a) If a coin is tossed once , the probability of getting

Head = ……

b) When rolling a dice once , the probability of getting

A number greater than 3 is ……

c) A bag has 9 red balls , 6 black balls , and 3 white

balls. Find the probability of getting:

1) Red ball= ……

2) Black ball=……

3) White ball=……

4) The greatest chance for …… ball .

5) The moderate chance for …… ball .

6) The weak chance for …… ball .

(Think)

What if there are 18 balls in a basket, and the probability

Of picking a red ball is one sixth. So, how many red balls
Are there in the basket?

Lesson 2: Certain and impossible events

1- **Complete** :

a) The probability of certain event is ……

b) The probability of impossible events is ……

c) The probability of possible events is between …… and ……..

2- **Write "certain" ,"Possible" , or "impossible" :**

Kareem will get the full mark in math. (……)

The sun rises from the west . (……)

The day after Friday is Saturday. (……)

Unit Test

1- Complete:

a) The probability of sure event is……

b) The probability of impossible event is……

c) The probability of possible event between …….and …….

d) As tossing a metallic coin once , then the probability of appearing ahead is ……

e) As throwing a fair die once , then the probability of appearing a prime number is ……

f) As throwing affair die once , then the probability of appearing a number less than 3 is ……

g) A class has 40 pupils . 15 of them are boys and the remainders are girls. if a pupi chosen randomly , then the probability that the pupil is a girl is ……

2- Story problems

a) A fair die is thrown once. What is the probability of each of the following events?

- Appearing odd number
- Appearing an even number
- Appearing a prime number and not even
- Appearing an odd prime number
- Appearing a number less than 1
- Appearing a number more than 5

b) A bag contains 5 red balls , 8 black balls and 7 white balls . all of them ar identical and equal in volume . a ball is drawn randomly , calculate the probability that:

- The drawn ball is black
- The drawn ball is not green
- The drawn ball is red or white
- The drawn ball is neither red nor white

1 Complete :

First | decimal numbers

1 $\frac{3}{4}$ = ... decimal number

2 $3\frac{7}{10}$ = ... decimal number

3 13.254 + 7.58 = ...

4 73.24 – 5.876 = ...

5 $42\frac{3}{5}$ – 18.57 = ...

6 754 ≈ ..... To nearest ten

7 4563.4 ≈ ..... To nearest thousands

8 0.2 + 0.02 + 0.002 + 2 = ...

9 4.543 = ... + ... + ... + ...

10 3692 ÷ 1000 = ...

11 32 × 100 = ...

12 3692 m. = ... km.

13 230 cm. = ... mm.

14 3.54 ≈ ..... To nearest tenth

15 54.56 ≈ ..... To nearest unit

16 $12\frac{17}{20}$ ≈ ..... To nearest tenth

17 $1\frac{7}{8}$ ≈ ..... To nearest tenth

18 35.26 ≈ 35.5 to nearest .....

19 24701 ≈ 25000 to nearest .....

20 24.6 kg. ≈ ..... to nearest kg.

21 five hundredth written as .....

22 The greatest number that can be formed of the digits 4 , 3 , 5 , 2 Is .....

23 The greatest number that can be formed of the digits 5 , 7 , 0 , 2 Is .....

24 The smallest number that can be formed of the digits 2 , 5 , 8 , 3 Is .....

25 The place value of the digit 5 in the number 2**5**4.3 is .....

26 The place value of the digit 3 in the number 2.41**3** is .....

27 The value of the digit 2 in the number **2**451.7 is .....

28 The value of the digit 4 in the number 2.0**4** is .....

29 53.2 , 53.4 , 53.6 , ... , ... in the same pattern.

30 572.56 – 570.497 = ... ≈ ..... To nearest tenth



Remember

Word	meaning
Greatest	أكبر
Decimal	عشري
Number	عدد
Nearest	أقرب
Digit	رقم
Smallest	اصغر
Value	قيمة

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Second — Approximating

1. $3.25 \approx$ ..... To nearest tenth
2. $25.258 =$ ..... To nearest hundredth
3. $2\frac{5}{8} \approx$ ..... To nearest hundredth
4. $3.251 + 61.24 =$ ..... To nearest hundredth
5. $0.5469 \approx$ ..... To nearest thousandth
6. $\frac{73254}{10000} \approx$ ..... To nearest thousandth
7. $4.9798 \approx$ ..... To nearest thousandth
8. $98 + 47.567 =$ ..... To nearest hundredth
9. $3.457 \approx 3.46$ to nearest .....
10. $2.325 \approx 2.3$ to nearest .....
11. $3.5781 \approx 3.579$ to nearest .....
12. $3.57 \approx 3.6$ to nearest .....



Third — Comparing fractions and decimals

1 Put the suitable relation (> , < or =)

1. $\frac{5}{8}$ ☁ $\frac{3}{8}$
2. $\frac{7}{5}$ ☁ $\frac{7}{4}$
3. $\frac{2}{5}$ ☁ $\frac{3}{4}$
4. $4\frac{1}{3}$ ☁ $\frac{13}{3}$

2 Find the value of the missed symbols

1. $\frac{2}{5} = \frac{a}{15}$
2. $\frac{b}{8} = \frac{15}{24}$
3. $\frac{2}{3} = \frac{16}{c}$
4. $\frac{4}{7} < \frac{x}{7} < \frac{6}{7}$

3 Arrange each of the following in an ascending order

1. $\frac{13}{7}, \frac{5}{7}, \frac{9}{7}, \frac{4}{7}, \frac{11}{7}$ — Order is : ....., ..., ..., ..., ...
2. $\frac{11}{12}, \frac{5}{12}, \frac{2}{3}, \frac{3}{4}, \frac{5}{6}$ — Order is : ....., ..., ..., ..., ...
3. 1.3 , 0.13 , 13 , 0.013 , 0.31 — Order is : ....., ..., ..., ..., ...

4 Arrange each of the following in a descending order

1. $\frac{12}{5}, \frac{12}{7}, \frac{12}{11}, \frac{12}{17}, \frac{7}{9}$ — Order is : ....., ..., ..., ..., ...
2. $\frac{3}{2}, \frac{3}{5}, \frac{3}{8}, \frac{6}{8}, \frac{3}{7}$ — Order is : ....., ..., ..., ..., ...
4. $2\frac{1}{2}$, 2.3 , $2\frac{3}{4}$, 2.6 , $2\frac{1}{8}$ — Order is : ....., ..., ..., ..., ...

Fourth — Multiplying decimals by 10 , 100 , 1000

1. $3.14 \times 100 =$ .....
2. $0.2513 \times 1000 =$ .....
3. $0.3 \times 1000 =$ .....
4. $12 \times 1000 =$ .....
5. $42.51 \times$ ..... $= 4251$
6. ..... $\times 100 = 321.1$
7. $(125.352 + 27.25) \times 1000 =$ ..... $\times 10 =$ ..... $\approx$ ..... To nearest tenth

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Fifth Multiplying decimals

1 $0.459 \times 6 =$ .....

2 $0.459 \times 0.6 =$ .....

3 $47.5 \times 57 =$ .....

4 $47.5 \times 5.7 =$ .....

5 $62.4 \times 0.05 =$ .....

6 $6.54 \times 32.4 =$ .....

7 $8 \times 4.587 \times 125 =$ .....

8 $4 \times 4.329 \times 25 =$ .....

9 If : $954 \times 684 = 652536$, then :

1 $95.4 \times 6.84 =$ .....

2 $0.954 \times 68.4 =$ .....

10 $65.4 \times 4.2 =$ .....

11 $34.5 \times 0.74 =$ .....

Actual product

2.35

× 2.35

.....

Estimated to ..... (2.35)

Estimated to ..... (× 2.35)

Estimation

.....

.....

.....

ACCEPTABLE : yes or no!

Actual product

2.35

× 2.35

.....

Estimated to ..... (2.35)

Estimated to ..... (× 2.35)

Estimation

.....

.....

.....

ACCEPTABLE : yes or no!



Actual product : ..... × ..... = ...

Estimation : ..... × ..... = ...

Actual product : ..... × ..... = ...

Estimation : ..... × ..... = ...

Sixth Multiplying and divide the fractions

1 $\frac{3}{4} \times \frac{8}{9} =$ .....

2 $\frac{5}{7}$ of $\frac{3}{25} =$ .....

3 $5\frac{1}{3} \times 2\frac{1}{4} =$ .....

4 $\left(\frac{3}{5} + \frac{1}{5}\right) \times \frac{1}{2} =$ .....

5 $\frac{5}{6} \times \frac{7}{11} =$ .....

6 $28 \times \frac{5}{7} =$ .....

7 $15 \div \frac{5}{7} =$ .....

8 $\frac{3}{4} \times \frac{9}{16} =$ .....

9 $7\frac{1}{2} \div 1\frac{1}{4} =$ .....

10 $5\frac{1}{2} \div 2\frac{2}{3} =$ .....

11 $4\frac{2}{3} \div$ ..... $= \frac{7}{6}$

12 $\frac{5}{7} \times$ ..... $= 15$

13 ..... $\div \frac{3}{8} = \frac{2}{9}$

14 $\frac{5}{7} \times$ ..... $= 1$

Remember

Word	meaning
Estimation	تقدير
Actual	فعلي
Product	حاصل ضرب
Ascending	تصاعدي
Descending	تنازلي
Comparing	مقارنة
Order	ترتيب
Approximate	يقرب

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Seventh Dividing decimals by 10 , 100 , 1000

1 653.2 ÷ 1000 = ...

2 121.5 ÷ 1000 = ...

3 0.3 ÷ 1000 = ...

4 23 ÷ 1000 = ...

5 754.2 ÷ ..... = 7.542

6 ..... ÷ 1000 = 0.0034

7 (457.5 – 251.26) ÷ 100 = ... ÷ 100 = ... ≈ ..... To nearest thousandth

Eighth Units Converting

1 2576 m. = 2576 ÷ ..... = ... km.

2 32671 gm. = 32671 ÷ ..... = ... kg.

3 32.56 L. = 32.56 × ..... = ... cm^3.

4 325 cm. = 325 ÷ ..... = ... m.

5 P.T. 354 = 354 ÷ ..... = L.E. .....

6 3.254 km. = 3.254 × ..... = ... m.

7 3.54 dm. = 3.54 ÷ ..... = ... m.

8 765.9 m. = 76.9 × ..... = ... dm.

9 2543.1 gm. = 2543.1 × ..... = ... kg.

10 5.4 m. = 5.4 × ..... = ... cm.

11 3214.95 mL. = 3214.95 ÷ ..... = ... L.

12 $\frac{3}{4}$ km. = $\frac{3}{4}$ × ..... = ... m.

13 $3\frac{5}{8}$ ton. = $3\frac{5}{8}$ × ..... = ... kg.

14 52 days. = 52 ÷ ..... ≈ ..... to nearest week.

15 53 months. = 53 ÷ ..... ≈ ..... to nearest year.

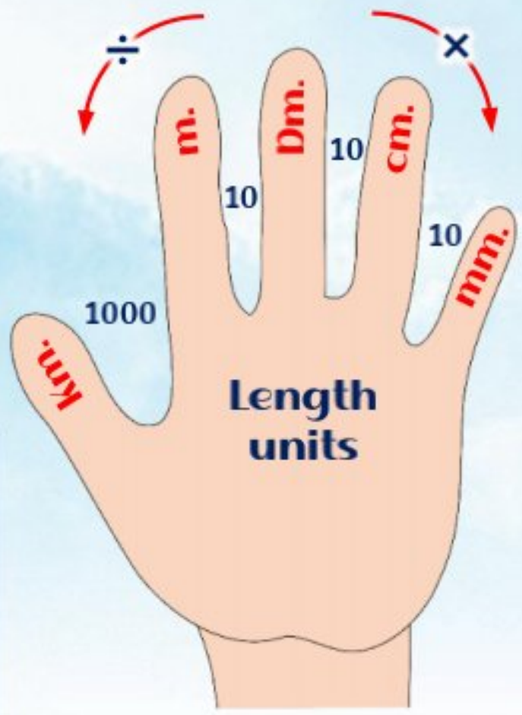
16 67 hours. = 67 ÷ ..... ≈ ..... to nearest day.

17 6541 m. = 6541 ÷ ..... ≈ ..... to nearest km.

18 983 cm^3. = 6541 ÷ ..... ≈ ..... to nearest dm^3.



Remember



Mass units

1 Kilogram = 1000 gram

1 Ton = 1000 kilogram

Capacity units

1 Litre = 1000 millilitre

Currency units

L.E.1 = P.T. 100

Time units

1 hour = 60 minutes

1 minutes = 60 seconds

1 Day = 24 hours

1 week = 7 days

1 year = 12 months

1 year = 365 days

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Ninth Division

1 $493 \overline{)37691}$

2 $234 \overline{)3978}$

3 $296 \overline{)62160}$

4 $0.92 \overline{)0.1932}$






5 $0.31 \overline{)0.7595}$

6 $0.8 \overline{)0.416}$

7 $67 \overline{)24455}$

8 $652 \overline{)417932}$






9 $7 \div 3 \approx$ ..... to nearest hundredth.

10 $3 \div 11 \approx$ ..... to nearest thousandth.

Tenth Comparing decimals

1	4.72×10	0.472×100	
2	0.28×7.3	0.73×2.8	
3	0.46×4.6	0.01	
4	3.251×100	325.1×100	
5	4.2×1.53	4.2×15.3	
6	0.3254×100	$325.4 \div 10$	
7	$3721 \div 1000$	0.3721×100	
8	3254 dm.	32.54 mm.	



2 choose the correct answer :

1 The smallest decimal of the following is .....

ⓐ 0.125 ⓑ 0.07 ⓒ 0.25 ⓓ 0.6

2 The greatest decimal of the following is .....

ⓐ 1.023 ⓑ 0.23 ⓒ 0.123 ⓓ 1.1

3 77.34×100 ..... 773.4×10

ⓐ > ⓑ < ⓒ = ⓓ ⩽

4 $84.84 \div 0.4 =$ .....

ⓐ 21.21 ⓑ 2.121 ⓒ 2121 ⓓ 121.2

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5 The smallest decimal can be formed of the digits 1 , 4 , 7 is .....

ⓐ 0.741 ⓑ 0.714 ⓒ 0.147 ⓓ 7.14

6 $9\frac{3}{25} \approx$ .....

ⓐ 0.9 ⓑ 9.2 ⓒ 9.1 ⓓ 9

7 $\frac{2}{3} \times$ ..... $= 1$

ⓐ $\frac{3}{2}$ ⓑ $\frac{2}{3}$ ⓒ 2 ⓓ 1

8 264 hours ≈ ..... days

ⓐ 9 ⓑ 10 ⓒ 11 ⓓ 12

9 0.46 × 4.6 ..... 0.1

ⓐ > ⓑ < ⓒ = ⓓ ⩽

10 13.376 + 15.75 ≈ ..... to nearest hundredth.

ⓐ 29.12 ⓑ 29.11 ⓒ 28.12 ⓓ 29.13

11 $4\frac{5}{9} \approx$ ..... whole.

ⓐ 4 ⓑ 5 ⓒ 6 ⓓ 7

12 67 days ≈ ..... week.

ⓐ 8 ⓑ 9 ⓒ 10 ⓓ 11

13 $\frac{1}{4}$ = ... decimal.

ⓐ 0.25 ⓑ 0.35 ⓒ 25 ⓓ 0.75

14 $4\frac{1}{8} \times 2\frac{2}{3} =$ ..... .

ⓐ 1 ⓑ 11 ⓒ 10 ⓓ 111

15 If : $\frac{2}{3} = \frac{16}{x}$, then : x = ...

ⓐ 16 ⓑ 24 ⓒ 15 ⓓ 1

16 11664 ÷ 216 = ...

ⓐ 45 ⓑ 54 ⓒ 540 ⓓ 504

17 255 ÷ 25 = 2.55 ÷ ..... .

ⓐ 0.25 ⓑ 2.5 ⓒ 25 ⓓ 0.025

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18 736.592 ≈ 736.59 to nearest ..... .

ⓐ tenth ⓑ unit ⓒ hundredth ⓓ thousandth

19 22724 ÷ 247 = ...

ⓐ 91 ⓑ 92 ⓒ 82 ⓓ 81

20 4.435 ÷ 1.52 = ... ÷ 152

ⓐ 4435 ⓑ 443.5 ⓒ 0.4435 ⓓ 44.35

21 3 ÷ 11 = ... to nearest tenth.

ⓐ 0.2 ⓑ 0.27 ⓒ 0.3 ⓓ 0.7



3 Answer the following :

1 Calculate the perimeter of an equilateral triangle of side length 3.14 cm.

2 Calculate the perimeter and the area of a square of side length 3.5 cm.

3 Calculate the perimeter and the area of a rectangle whose length = 4.5 cm.
and its width = 2.25 cm.

4 The price of one kilogram of bananas = L.E. 10 , then find the price of 3.75 kg. of bananas.

5 The price of bar of chocolate is L.E. 2.75 , what is the cost of 15 bars of the same kind ?

6 If the price of one meter of cloth is L.E. 6.45 , what is the cost of 2.4 meters of cloth.

7 A car covers equal distances in equal times. How many kilometers does it cover
in 2 hours and 15 minutes if its speed is 73.25 kilometers per hour.

8 the product of two numbers is 9088 , if one of them is 284 , find the other number.

9 How many quarters in L.E. 5.

10 The area of a rectangle is 10.25 meters , and its length is 4.1 meters
Find its width and its perimeter.



11 An owner of packing food factories wanted to pack 5904 kilograms of sugar
equally in 492 packs . what is weight of each pack.

Best wishes, mr abdelrahman essam

01022543617

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1 Answer The following questions :

First : Write all elements of the following sets

1 The set of Rainbow colors

.....

2 The set of The letters of the word " book "

.....

3 The set of The numbers between 5 and 9

.....

4 The set of factors of 6.

.....

5 The set of multiples of the Dijet 3 less than 20.

.....

6 The set of even numbers between 2 and 8 .

.....

7 The set of seasons of the year .

.....

8 The set of main directions .

.....

9 The set of prime numbers less than 25 .

.....

10 The set of odd numbers .

.....

11 The set of the days of the week .

.....

12 The set of the months of the hegira calendar.

.....

13 The set of the digit of the number 612413.

.....

14 The set of the 2-digit numbers and each like the other.

.....

15 The set of The letters of the word " element "

.....

16 The set of even prime numbers.

.....

17 The set of prime factors of 18.

.....

18 The set of the traffic light colors .

.....



Remember

Word	meaning
Set	مجموعة
Element	عنصر
Factor	عامل
Multiple	الخريف
Rainbow	قوس قزح
directions	اتجاهات
Letters	حروف
Even	زوجي
Odd	فردي
Prime	أولي
Main	أساسي

Seasons of the year

Summer	الصيف
Spring	الربيع
Winter	الشتاء
Autumn	الخريف

Days of the week

Saturday	السبت
Sunday	الأحد
Monday	الاثنين
Tuesday	الثلاثاء
Wednesday	الأربعاء
Thursday	الخميس
Friday	الجمعة

Rainbow colors

Red	أحمر
Orange	برتقالي
Yellow	أصفر
Green	أخضر
Blue	أزرق
Indigo	نيلي
Violet	بنفسجي

Egypt's flag colors

Red	أحمر
black	أسود
White	أبيض

Main directions

East	شرق
West	غرب
North	شمال
South	جنوب

Traffic light colors

Red	أحمر
Yellow	أصفر
Green	أخضر

The odd numbers

{ 1 , 3 , 5 , 7 , 9 , ... }

The Even numbers

{ 0 , 2 , 4 , 6 , 8 , ... }

The Prime numbers

{ 2 , 3 , 5 , 7 , 11 , 13 , 17 , 19 , 23 , 29 , ... }

The factors of 12

{ 2 , 6 , 3 , 4 , 1 , 12 }

The multiples of 4

{ 0 , 4 , 8 , 12 , 16 , .. }

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Second : Express each of the following sets by using the description method.

17 { red , white , black }

.....

17 { 3 , 6 , 9 , 12 }

.....

17 { 2 , 3 , 5 , 7 , 11 , 13 }

.....

17 { 0 , 2 , 4 , 6 , 8 , ... }

.....

17 { M , o , n , k , y }

.....

17 { east , west , north , south }

.....



Third : Complete the following table

The Sets	Finite			Infinite
	Number of elements	Empty	Non empty	
1 The set of even prime numbers.				
2 The set of the 2-digit numbers and each like the other.				
3 The set of multiples of the Dijet 5 less than 3.				
4 The letters in the English alphabet.				
5 The set of even numbers between 3 and 4 .				
6 The set of multiples of the Dijet 5 more than 99.				
7 The set of The letters of the word " element "				
8 The set of even prime numbers less than 20.				
9 The set of prime factors of 18.				
10 The set of odd numbers between 1 and 5 .				

Fourth : Complete using the suitable ($\in$, $\notin$, $\subset$, $\not\subset$)

1 3 ..... { 2 , 3 , 4 , 5 }

2 12 ..... { 2 , 4 , 6 , 8 , ... }

3 { 3 , 4 } ..... { 2 , 3 , 4 , 5 }

4 ϕ ..... { 0 }

5 ϕ ..... { }

6 3 ..... The set of factors of 20

7 Red ..... The set of rainbow colors

8 7 ..... { 7777 }

9 23 ..... the set of digits of " 23545 "

10 { 5 , 10 } ..... The set of multiples of 5.

11 { 1.2 } ..... { 1 , 2 , 12 }

12 { 2 , 9 } ..... the set of prime numbers.

13 { green } ..... colors of Egypt's flag

14 { 5 } ..... { 3 , 5 } $\cap$ { 4 , 7 }

15 { 0 } ..... ϕ

16 { 3 } ..... { 2 , 3 , 4 } - { 2 , 5 }

17 { 3 , 5 } ..... { 3 } $\cup$ { 4 , 5 , 6 }

18 ϕ ..... { 2 , 3 } $\cup$ { 3 , 5 }

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2 If : $X = \{2,4,6,8\}$, $Y = \{2,3,5,8\}$ and $Z = \{5,7,2,6,9\}$, Then answer the following :

First : Complete the following

1. $X \cup Y = \{$ ..... $\}$
2. $X \cap Y = \{$ ..... $\}$
3. $X \cup Z = \{$ ..... $\}$
4. $X \cup Z = \{$ ..... $\}$
5. $Y \cup Z = \{$ ..... $\}$
6. $Y \cup Z = \{$ ..... $\}$

second : Complete the following

1. $X - Y = \{$ ..... $\}$
2. $Y - X = \{$ ..... $\}$
3. $X - Z = \{$ ..... $\}$
4. $Z - X = \{$ ..... $\}$
5. $X - Z = \{$ ..... $\}$
6. $Z - X = \{$ ..... $\}$

Third : Complete using the suitable ($\in$, $\notin$, $\subset$, $\not\subset$)

1. $\{4\}$ ..... Z
2. 3 X
3. 24 X
4. $\{3,9\}$ ..... $(X \cup Y)$
5. ϕ ..... Y
6. $\{2\}$ ..... $(X \cap Y)$
7. 5 ..... $(X - Y)$
8. $(X \cap Y)$ ..... $(X \cup Y)$

Fourth : represent the sets by Venn diagram and then :

1. color the area which represents ($X \cap Y \cap Z$) by a red ■ color
2. color the area which represents ($X \cap Y$) by a blue ■ color
3. color the area which represents ($X \cap Y$) by a green ■ color
4. color the area which represents ($X \cap Y$) by a yellow ■ color



Remember

Word	meaning
area	منطقة
Represent	يمثل
observe	يلاحظ
intersect ($\cap$)	تقاطع
Union ($\cup$)	اتحاد
Belong ($\in$)	ينتمي
Subset ($\subset$)	جزئية

Fifth : Find

1. $(X \cap Y) \cap Z$, $X \cap (Y \cap Z)$ and $(X \cap Y \cap Z)$ What do you observe ?
2. $(X \cup Y) \cup Z$, $X \cup (Y \cup Z)$ and $(X \cup Y \cup Z)$ What do you observe ?



3 If : $U = \{1,2,3,4,5,6,7,8,9,10,11,12,13\}$, $X = \{1,2,3,4\}$, $Y = \{2,3,5,7\}$ and $Z = \{2,5,6,8,11\}$, Then answer the following :

First : Complete the following

1. $X \cup Y = \{$ ..... $\}$
2. $X \cap Y = \{$ ..... $\}$
3. $X \cup Z = \{$ ..... $\}$
4. $X \cup Z = \{$ ..... $\}$
5. $Y \cup Z = \{$ ..... $\}$
6. $Y \cup Z = \{$ ..... $\}$

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second : Complete the following

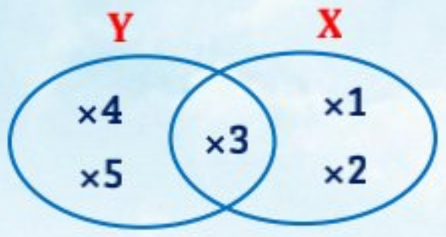
1 X – Y = { ..... }
2 Y – X = { ..... }
3 X – Z = { ..... }
4 Z – X = { ..... }
5 X – Z = { ..... }
6 Z – X = { ..... }

Third : represent the sets by Venn diagram and then find :

1 X` = { ..... }
2 Y` = { ..... }
3 Z` = { ..... }
4 (X ∩ Y)` = { ..... }
5 (X ∪ Y)` = { ..... }
6 (X – Y)` = { ..... }
7 X` ∩ Y` = { ..... }
8 Y` ∪ Z` = { ..... }

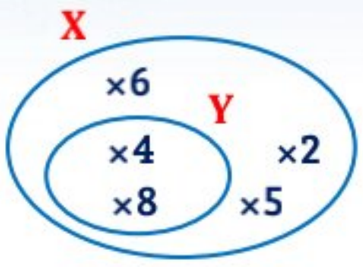
4 Look at the following Venn diagrams and then answer the questions

1 X ∩ Y = { ..... }
2 Y ∪ X = { ..... }
3 X – Y = { ..... }
4 Y – X = { ..... }

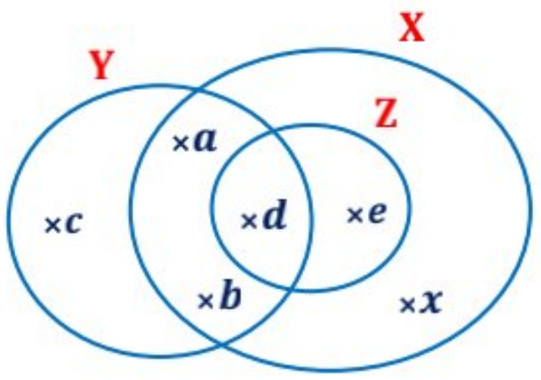


Complete using the suitable (∈ , ∉ , ⊂ , ⊄)

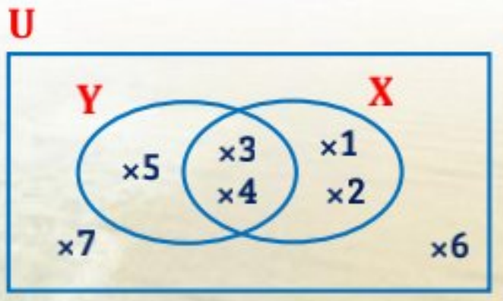
1 X ..... Y
2 2 X
3 {5} ..... Y
4 6 ..... Y
5 4 X
6 {6,8} X



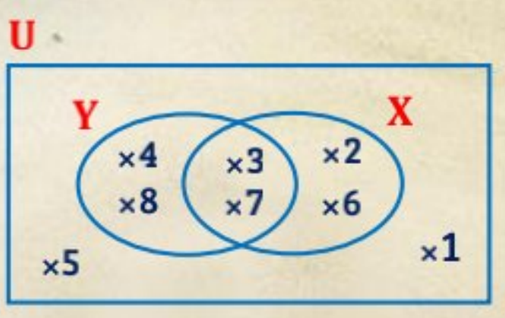
1 Y – X = { ..... }
2 Z – Y = { ..... }
3 X – Y = { ..... }
4 Y – Z = { ..... }
5 X ∩ Y = { ..... }
6 X ∩ Y ∩ Z = { ..... }



1 X ∩ Y = { ..... }
2 X ∪ Y = { ..... }
3 X – Y = { ..... }
4 Y – X = { ..... }
5 X` = { ..... }
6 Y` = { ..... }



1 X ∩ Y = { ..... }
2 X ∪ Y = { ..... }
3 (X ∩ Y)` = { ..... }
4 X` ∩ Y` = { ..... }
5 X` = { ..... }
6 Y` = { ..... }



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1 $X - Y$ = { ..... }

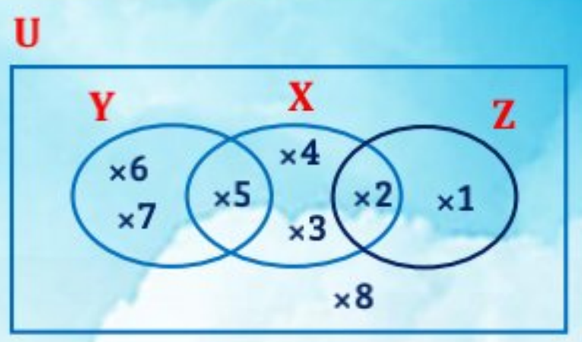
2 $X \cap Y$ = { ..... }

3 $Y - Z$ = { ..... }

4 $X \cup Z$ = { ..... }

5 $Z - X$ = { ..... }

6 $Y`$ = { ..... }



Write all subsets in each of the following sets :

1 $\{3\}$ .....

2 $\{2,3\}$ .....

3 $\{4,5\}$ .....

4 $\{a,b\}$ .....

5 $\{2,3,4\}$ .....

6 $\{1,5,6\}$ .....





Help the bee to out

6 Complete each of the following

1 If : $a \in \{2,3\}$, then : $a =$ ..... or .....

2 If : $a + 1 \in \{7\}$, then : $a =$ .....

3 If : $2 \in \{a - 3, 4, 5\}$, then : $a =$ .....

4 If : $5 \in \{a + 2, 6\}$, $4 \in \{2b, 3, 1\}$, then : $a + b =$ .....

5 If : $5 \in \{a, 2\} = \{b, 5\}$ then : $a + b =$ .....

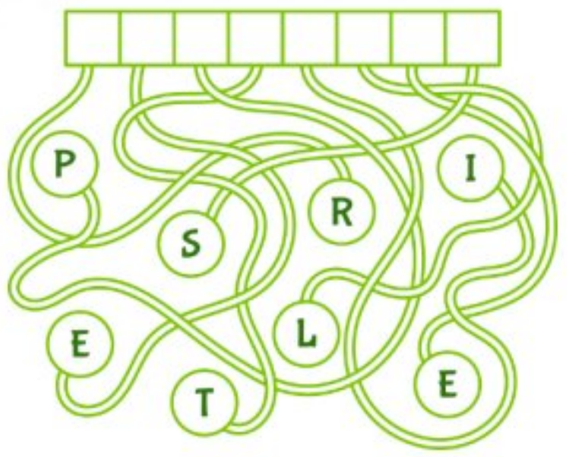
6 If : $\{a, 3\} \subset \{3, 4, 5\}$ then : $a =$ ..... or .....

7 If : $\{7, 10\} \subset \{10, x + 4\}$ then : $x =$ .....

8 If : $\{x - 1, 7\} \subset \{2, y + 4\}$ then : $x =$ ..... and $y =$ .....

9 If : $a \in \{3, 4, 5\}$ and $a \in$ the set of factors of the digit 6 , then : $a =$ ..... or .....

10 If : $a \in \{1, 2, 3\}$ and $a \notin$ the set of prime numbers , then : $a =$ .....



Search the hidden word



Help the driver reach to school

Mr. Abdelrahman Essam

TEL. 01022543617

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11 If : $a \in \{5,7,9\} \cap \{4,7,11\}$, then : $a =$ .....

12 If : $5 \in \{2,3,4\} \cup \{y-1,6,7\}$, then : $y =$ .....

13 If : $5 \in \{x-2,7\} \cap \{5,6,9\}$, then : $y =$ .....

14 If : $a \in \{2,3\} \cap \{3,4,5\}$, then : $a =$ .....

15 If : $a \notin \{5,3,4\} \cap \{2,3,4\}$, then : $a \neq$ .....



16 If : $\{x,5\} \cap \{3,4\} = \{3\}$, then : $x =$ .....

17 If : $\{x,2,3\} \cap \{4,y\} = \{2,4\}$, then : $x+y =$ .....

18 If : $\{x,2\} \cup \{4,5\} = \{2,4,5\}$, then : $x =$ .....

19 If : $\{x,2\} - \{4\} = \{2\}$, then : $x =$ .....

20 If : $\{4,6,8\} - \{5,6,7,a+2\} = \{4\}$, then : $a =$ .....

7 Complete each of the following

1 If : X = {2, 3} and Y = {3, 5}
, then : X ∩ Y = ... , X − Y = ...

2 If : X = {1, 2, 3} and Y = {3, 2}
, then : X ∪ Y = ... , Y − X = ...

3 If : X ⊂ Y , then : X ∪ Y = ... , Y ∩ X = ...

4 If : X ⊂ Y , then : X − Y = ... , Y − X = ...

5 If : X non empty set , then : X ∩ Y = ... , Y ∪ X = ...

6 If : X non empty set , then : X ∩ X` = ..... , X ∪ X` = ...

U intersect X = U
U union X = U
U − X = X`
X ∩ X` = ϕ
X ∪ X` = U
U universal set



7 If : X non empty set , then : X − X` = ..... , X` − X = ...

8 If : U the universal set , then : X ∩ U = ... , X ∪ U = ...

9 If : U the universal set , then : X − U = ... , U − X = ...

10 The number of subsets of the set { 3 } equals .....

11 The number of subsets of the set { 4 , 5 } equals .....



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8 Choose the correct answer :

1 5 ..... $\{7,4\} \cap \{5,3\}$

ⓐ $\in$ ⓑ $\notin$ ⓒ $\subset$ ⓓ $\not\subset$

2 If : $\{2,5,7\} = \{5, x+1, 2\}$, then : x = ...

ⓐ 2 ⓑ 5 ⓒ 7 ⓓ 6

3 If : $\{52\} = \{5,2\}$

ⓐ $\in$ ⓑ $\notin$ ⓒ $\subset$ ⓓ $\not\subset$

4 The number of subsets of the set $\{3,5\}$ equals .....

ⓐ 1 ⓑ 2 ⓒ 3 ⓓ 4

5 If : $Y = \{2,3\} \cup \{1,2,4\}$, then : 5 ..... Y

ⓐ $\in$ ⓑ $\notin$ ⓒ $\subset$ ⓓ $\not\subset$

6 X – X = ...

ⓐ zero ⓑ ϕ ⓒ X ⓓ 1

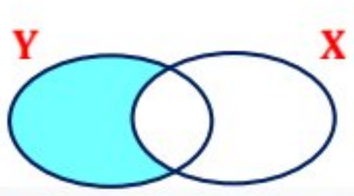
7 $\phi \cup \{2\}$ = ...

ⓐ $\{2\}$ ⓑ ϕ ⓒ $\{0\}$ ⓓ $\{0,2\}$

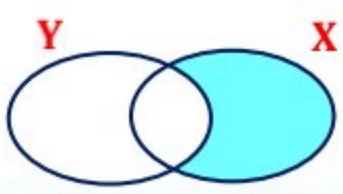
8 If : X and Y are two distant sets , then : $X \cap Y$ = ...

ⓐ X ⓑ Y ⓒ Y ⓓ ϕ

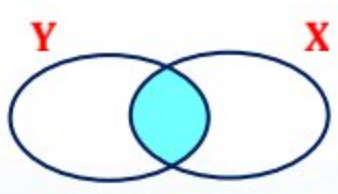
9 In each of the following Venn diagram , write what the colored section represents :



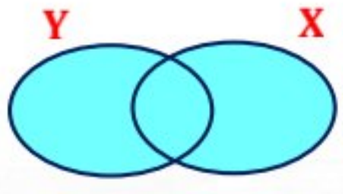
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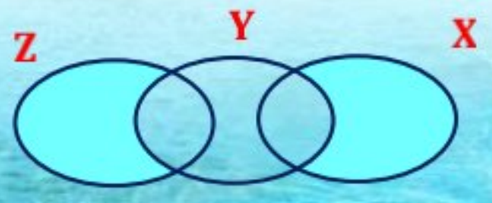
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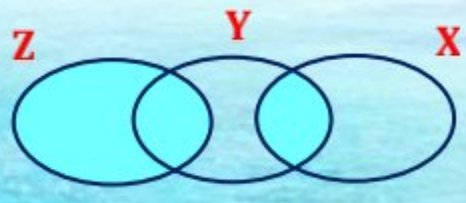
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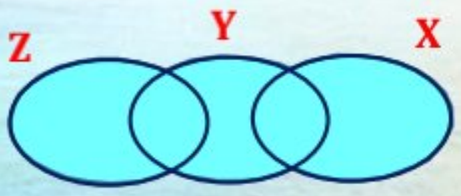
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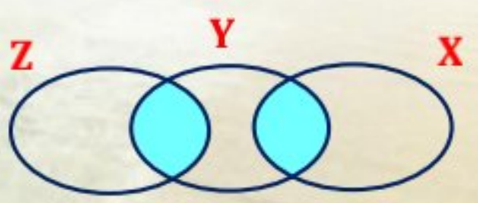
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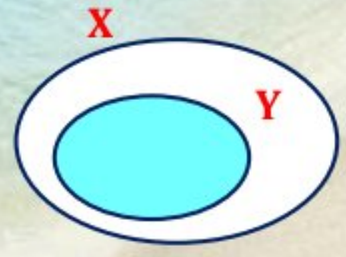
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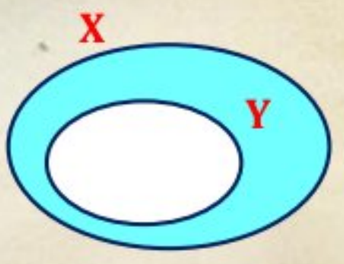
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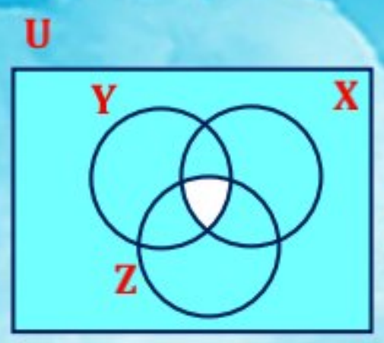


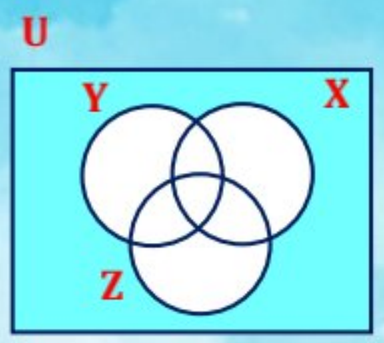
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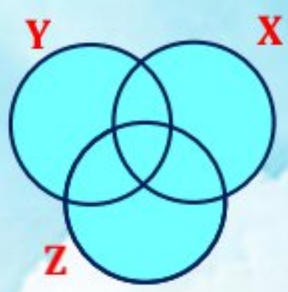
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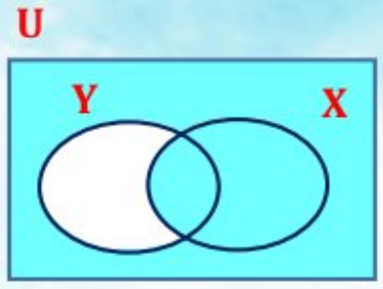
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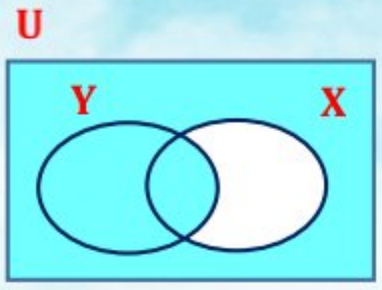


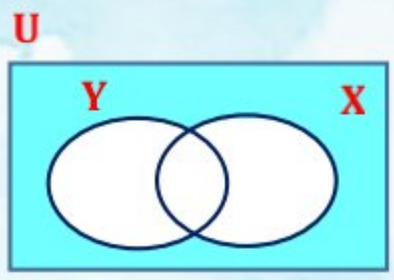


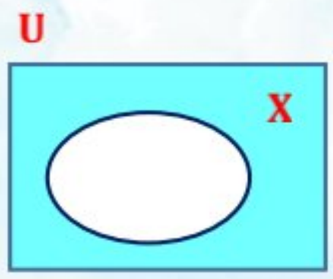












Best wishes, mr abdelrahman essam

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Revision for primary five

[1] The set of natural numbers and representing it on the number line:-

① Use $\in, \notin, \subset, \not\subset$:

① $\{3,6\} \cap \{4,9\}$ ..... N

② $\{1,10\} \cup \{1, 0.5\}$ ..... N

③ $8 - 10$ ..... N

② Represent the following answers on the number line

① $2 \times 4 =$ .....

② $4+3 =$ .....

③ $7 - 2 =$ .....

④ the set of natural number less than 5

[3] Complete:-

① $45 \times$ ..... $= 125 \times$ ..... (..... property)

② $(12 \times 4) \times$ ..... $= 12 \times ($ ..... $\times 7)$ (..... property)

③ $15 \times$ ..... $=$ ..... $\times 15 = 15$

④ $7 \times (4 +$ ..... $) = 7 \times$ ..... $+ 7 \times 5$ (..... property)

⑤ ..... is the multiplicative identity element, ... is additive ident

[4] Use the commutative and associative property to find result:-

① $25 \times 48 \times 4$

② $125 \times 17 \times 16$

[5] Use the distributive property to find the result:-

① 45×102

② 25×99

[2] Equations :-

[1] Solve the following equations :-

① $x + 9 = 17$ ② $y - 3 = 3$

③ $4m = 24$ ④ $\frac{1}{2} x = 7$

⑤ $2x - 5 = 5$ ⑥ $\frac{1}{3} y - 2 = 0$

[2] Write the following equations and solve it :-

① Three times a number is added to 1 is 4

② Twice a number is 50

③ The age of Ahmed after nine years is 20

④ product of 9 and a number minus 5 is 4

[3] Complete in the same pattern :-

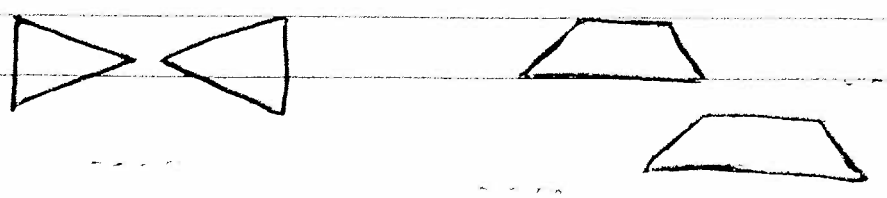
① 3, 3, 6, 9, 15, 24, ---, ---, ---

② 1, 2, 6, 24, ---, ---, ---

③ 10, 30, 60, 100, ---, ---, ---

[4] Write below each shape the type of the geometric transformation (reflection, translation, rotation) :-





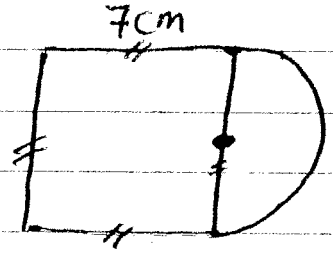
Circumference of a circle :-

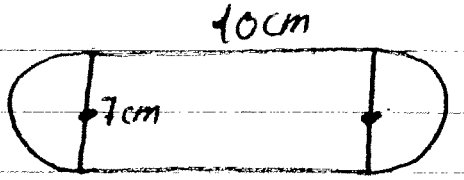
[1] Which is greater: the perimeter of a rectangle of dimension 8cm and 5cm or the circumference of a circle of radius 7cm. ($\pi = \frac{22}{7}$).

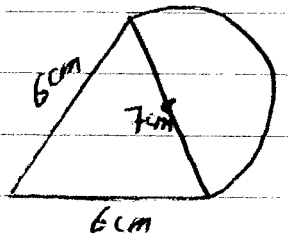
[2] Find the difference between perimeter of square with side length 10 cm and circumference of a circle of diameter 21cm ($\pi = \frac{22}{7}$).

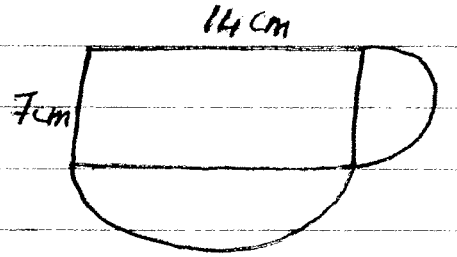
[3] The circumference of a circle is 31.4 cm then its radius length is ..... cm ($\pi = 3.14$).

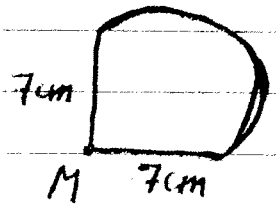
[4] Find the perimeter of the following shapes :- ($\pi = \frac{22}{7}$)

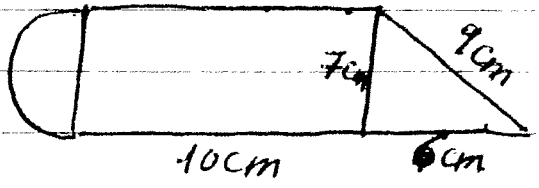
① 

② 

③ 

④ 

⑤ 

⑥ 

[5] Complete :-

① If circumference of a circle is 10π cm, then its radius = ... cm.

② Circumference of a circle = 2X ..... X .....

③ The diameter length = 2X .....

Area of triangle, parallelogram, rhombus, square and rectangle.

[1] Complete: ① If the area of a triangle is 180 cm^2 and its height is 10 cm then its base length is _____ cm.

② If the perimeter of an equilateral triangle is 24cm and its height is 10 cm then its area is _____ cm^2.

③ If the area of a triangle is 24 cm^2 and its height is 4cm then its base length is _____ cm.

④ The area of parallelogram = ____ X ____

⑤ If the lengths of two diagonals in a rhombus is 20cm a 10cm then its area is _____ cm^2

⑥ In a rhombus with perimeter 12 cm and its height 4cm then its area is _____ cm^2.

⑦ In a square, if its side length is 10 cm then its area is _____ cm^2

⑧ The length of a diagonal in a square is 6cm then its area is _____ cm^2.

⑨ The perimeter of a square is 20 cm then its area is _____ cm^2.

[2] Two pieces of land, the first in the squared shape with side length 12 m and the second in rhombus with diagonals 20 m and 14 m. Find the difference between of their areas.

[3] A square has area 16 cm^2 then find the side length.

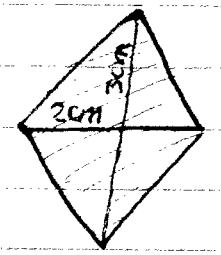
[4] A square with area 8 cm^2 find its diagonal length.

[5] In a rhombus with side length 6cm and height 4 cm and it the length of one diagonal is 8cm Find the length of other diagonal.

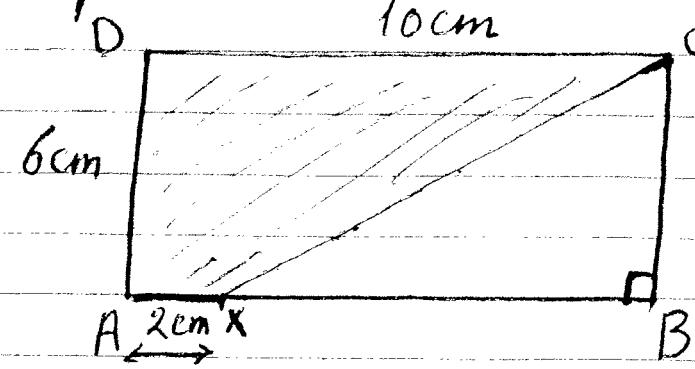
[6] The area of square with side length 6cm = the area of a rectangle with length 9cm and width ____ cm.

* Find the area of shaded part:-

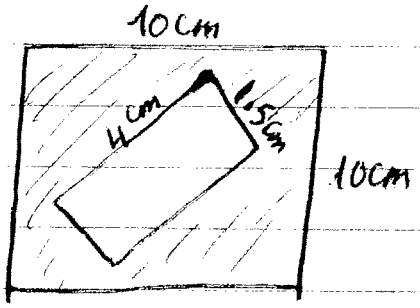
(1)



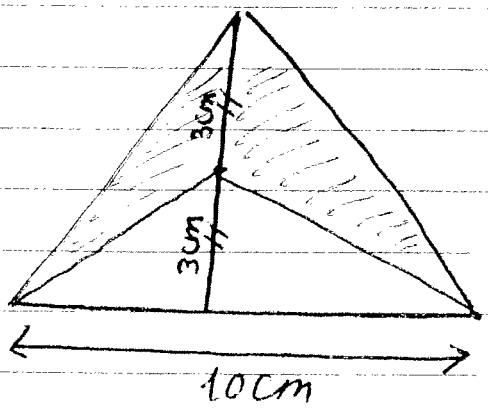
(2)



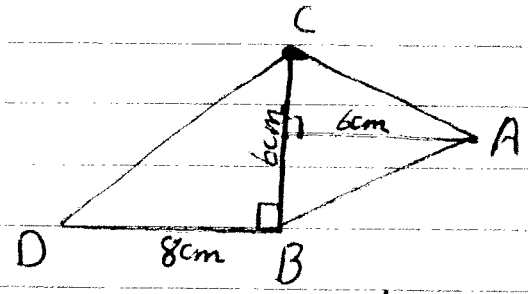
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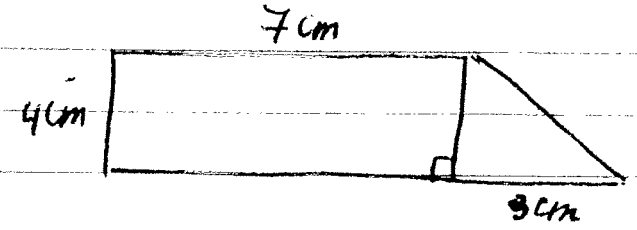


(4)



* Find the area of the following shapes:-





* Draw a histogram for the following distribution:-

sets	0-	10-	20-	30-	40-
Freq.	4	8	11	7	5

* The table below shows the number of books in school library in different subjects:

Math	Arabic	English
20	40	20

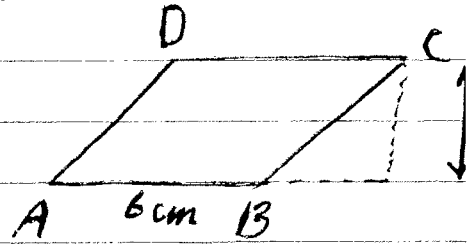
Represent these data by a pie chart.

1* Represent the following data in the table by a pie chart:

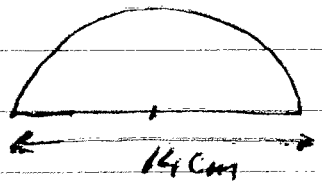
Grade	1st	2nd	4th
Students	1/4	1/4	.....

2* Connect the points A(1, 2), B(3, 9), C(5, 2), A(1, in the order A → B → C → A then draw the line of symmetry.

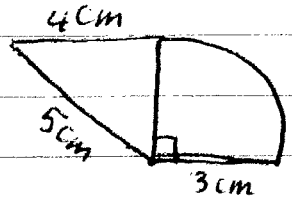
3* The area of the parallelogram ABCD is $30cm^2$, AB = 6cm Find the height.



4* Find the perimeter of this figure



5* Find the perimeter of this figure.



$\pi = 3.$

6* If the radius of the tyre of a bicycle is 33 cm, what is the distance cut by the bicycle in 100 whole rotations? ($\pi = 3.14$)

7* The weights of 40 pupils

41	37	40	42	44	41	45	38
42	43	37	38	42	46	39	45
40	36	40	38	42	42	41	40
43	39	40	41	39	41	43	40
39	38	35	46	44	36	44	43

a) Make a frequency table using the sets: 35–, 38–, 41–

b) Draw a histogram and a frequency polygon to represent data